

# Ending the HIV/AIDS Pandemic

From Scientific  
Advances to Public  
Health Implementation

2015 Charles C. Shepard Science Awards



Keynote Speaker:  
**Anthony S. Fauci, MD**





## Charles C. SHEPARD

The preeminent science awards of CDC/ATSDR, inaugurated in 1986, are named in honor of Charles C. Shepard, MD, the internationally recognized microbiologist who was chief of the Leprosy and Rickettsia Branch at CDC for more than 30 years, until his death on February 18, 1985.

Charles Carter Shepard was born in Ord, Nebraska, on December 18, 1914. He attended Stanford University (1932–1935) and then transferred to Northwestern University, where he received BS, MS, and MD degrees. In 1941, he joined the Commissioned Corps of the Public Health Service. From 1942 through 1948, he worked at the National Institutes of Health (NIH) in Bethesda, Maryland.

While on sabbatical during 1948–1949, he worked in the laboratory of Arne Tiselius in Uppsala, Sweden, and learned the new physical separation techniques that would revolutionize immunology and biochemistry. He returned to Bethesda for a year before moving to the Rocky Mountain Laboratory, National Institute of Allergy and Infectious Diseases, NIH, in Hamilton, Montana, to study various pathogenic bacteria and their phages at the biochemical and ultrastructural levels. In 1953, he came to CDC, where he continued his outstanding work with rickettsiae and began his distinguished and definitive experiments with mycobacteria, which culminated with the cultivation of the leprosy bacillus, *Mycobacterium leprae*, in mice. His landmark article, “The Experimental Disease that Follows the Injection of Human Leprosy Bacilli into Foot-Pads of Mice” (*Journal of Experimental Medicine* 1960;112:445–454), is still considered a classic in microbiology. His achievement made possible the large-scale evaluation of antibiotic efficacy and reduced testing time from several years to only months. It also paved the way for leprosy vaccine studies.

Dr. Shepard made significant early contributions to the diagnosis, natural history, and epidemiology of Rocky Mountain spotted fever; Q fever; and scrub, murine, and epidemic typhus. He was also codiscoverer (with Joseph McDade) of the Legionnaires' disease bacterium (*Legionella pneumophila*) after the now famous outbreak of virulent pneumonia in Philadelphia in 1976.

Dr. Shepard received numerous awards, among them the Gorgas Medal (1962), the Kimble Methodology Award (1962), the Philip R. Edwards Award (1964), the World Leprosy Day Award (1970), and the first CDC Medal of Excellence (1977). He also received the HEW Distinguished Service Medal (1978), the Raol Folleraux Award (1978), and the Richard and Hinda Rosenthal Award (1979). He was active in multiple professional organizations, including the Armed Forces Epidemiologic Board Commission on Rickettsial Diseases; the WHO Immunology of Leprosy Program; the WHO Advisory Panel on Leprosy; the Heiser Program for Research in Leprosy; and the Leprosy Research Council, which he chaired. He was also involved in many editorial activities, having served on the board of directors of the *International Journal of Leprosy* and as a frequent reviewer for numerous prestigious journals.

Although Dr. Shepard's contributions to science and public health were prodigious, perhaps his greatest legacy is the influence he has had on the CDC scientists who have followed in his footsteps and have continued to find inspiration in the scientific integrity and excellence he has come to represent.



# Awards PROGRAM

10:00 a.m. to 11:30 a.m. • June 18, 2015

Tom Harkin Global Communications Center  
Building 19, Alexander D. Langmuir Auditorium, CDC Roybal Campus  
1600 Clifton Road, Atlanta, Georgia

Introductory Remarks	Samuel Posner, PhD
Introduction of Keynote Speaker	Thomas R. Frieden, MD, MPH
"Ending the HIV/AIDS Pandemic: From Scientific Advances to Public Health Implementation"	Anthony S. Fauci, MD
Presentation of the 2015 Charles C. Shepard Science Awards	Ron Otten, PhD
Assessment	
Data Methods and Study Design	
Laboratory Science	
Prevention and Control	
Lifetime Scientific Achievement	
Closing	Ron Otten, PhD



*All guests and CDC and ATSDR staff are invited to attend a reception honoring the award nominees.*



Keynote Speaker:

## Anthony S. FAUCI

Director  
National Institute of Allergy and  
Infectious Diseases  
National Institutes of Health

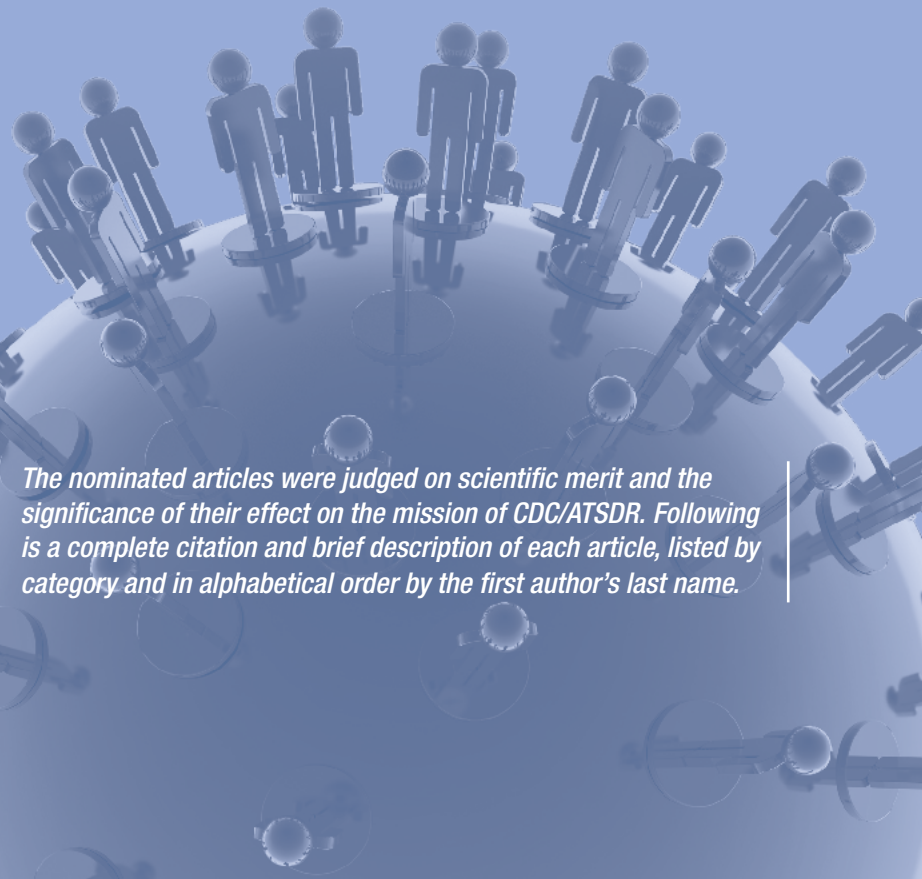
Dr. Anthony S. Fauci is director of the National Institute of Allergy and Infectious Diseases (NIAID) at the National Institutes of Health. Since his appointment as NIAID director in 1984, Dr. Fauci has overseen an extensive research portfolio devoted to preventing, diagnosing, and treating infectious and immune-mediated diseases—including HIV/AIDS and other sexually transmitted infections, influenza, tuberculosis, malaria, and illness from potential agents of bioterrorism.

As the long-term chief of the NIAID Laboratory of Immunoregulation, Dr. Fauci has made many discoveries related to HIV/AIDS and is one of the most-cited scientists in the field. He is one of the key advisors to the White House and Department of Health and Human Services on global AIDS issues and on initiatives to bolster medical and public health preparedness against emerging infectious disease threats such as pandemic influenza. He was one of the principal architects of the President's Emergency Plan for AIDS Relief (PEPFAR), which has already been responsible for saving millions of lives throughout the developing world.

Dr. Fauci is a member of the U.S. National Academy of Sciences and is the recipient of numerous prestigious awards for his scientific and global health accomplishments, including the National Medal of Science, the Mary Woodard Lasker Award for Public Service, and the Presidential Medal of Freedom. He has been awarded 38 honorary doctoral degrees. He serves on the editorial boards of many scientific journals; as an editor of *Harrison's Principles of Internal Medicine*; and as author, coauthor, or editor of more than 1,200 scientific publications, including several major textbooks.

# Publication Award NOMINEES

Nominated by the Centers for Disease Control and Prevention and the Agency for Toxic Substances and Disease Registry (CDC/ATSDR) for the 2015 Charles C. Shepard Science Awards



*The nominated articles were judged on scientific merit and the significance of their effect on the mission of CDC/ATSDR. Following is a complete citation and brief description of each article, listed by category and in alphabetical order by the first author's last name.*



## ASSESSMENT

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Lara J. Akinbami, Jeanne E. Moorman, Alan E. Simon,  
and Kenneth C. Schoendorf

### [Trends in Racial Disparities for Asthma Outcomes Among Children 0 to 17 years, 2001–2010](#)

*The Journal of Allergy and Clinical Immunology* 2014;134(3):547–553.e5

The continued rise in asthma prevalence is not well understood. Using nationally representative data from the National Center for Health Statistics, this paper shows that black children were twice as likely as white children to have asthma and that asthma prevalence has increased since 2001 among black children but not among white children.

Mohammad Mousa Al-Abdallat, Daniel C. Payne, Sultan Alqasrawi, Brian Rha, Rania A. Tohme, Glen R. Abedi, Mohannad Al Nsour, Ibrahim Iblan, Najwa Jarour, Noha H. Farag, Aktham Haddadin, Tarek Al-Sanouri, Azaibi Tamin, Jennifer L. Harcourt, David T. Kuhar, David L. Swerdlow, Dean D. Erdman, Mark A. Pallansch, Lia M. Haynes, and Susan I. Gerber for the Jordan MERS-CoV Investigation Team

### [Hospital-Associated Outbreak of Middle East Respiratory Syndrome Coronavirus: A Serologic, Epidemiologic, and Clinical Description](#)

*Clinical Infectious Diseases* 2014;59(9):1225–1233

Novel serologic assays were developed to identify cases of MERS-CoV in a hospital-associated outbreak in Jordan. The investigation informed the epidemiology of an emerging and high-mortality virus and determined the extent of the outbreak. Findings showed the effect of the rapid development of serologic assays and the role assays have in outbreak investigations—in particular, in diagnosing less-severe MERS-CoV cases that would otherwise have been undetected.

Jane A. Gwira Baumbblatt, Caleb Wiedeman, John R. Dunn, William Schaffner, Leonard J. Paulozzi, and Timothy F. Jones

### [High-Risk Use by Patients Prescribed Opioids for Pain and Its Role in Overdose Deaths](#)

*JAMA Internal Medicine* 2014;174(5):796–801

Frequent high-risk use of prescription opioids and deaths from overdose are increasing in Tennessee. This study measured the prevalence of high-risk behaviors—such as doctor- or pharmacy-shopping and acquiring multiple or high-dose prescriptions—and their association with opioid analgesic overdose deaths. The authors show that Tennessee's prescription drug monitoring program can be used to highlight trends in opioid prescribing and identify patients at risk for overdose death.

Katherine E. Bowden, Margaret M. Williams, Pamela K. Cassiday, Andrea Milton, Lucia Pawloski, Marsenia Harrison, Stacey W. Martin, Sarah Meyer, Xuan Qin, Chas DeBolt, Azadeh Tasslimi, Nusrat Syed, Ronald Sorrell, Mike Tran, Brian Hiatt, and Maria Lucia Tondella

### [Molecular Epidemiology of the Pertussis Epidemic in Washington State in 2012](#)

*Journal of Clinical Microbiology* 2014;52(10):3549–3557

Washington state saw an increase in pertussis cases beginning in 2011. In most cases, patients said their vaccinations were up to date. Using pertactin genotyping in a set of isolates, this study makes clear the molecular diversity seen in circulating populations of *B. pertussis* isolated from a highly vaccinated population during an epidemic. The study also supports expanding molecular typing of *B. pertussis* to include whole-genome analysis.

Amy M. Branum, Lauren M. Rossen, and Kenneth C. Schoendorf

### [Trends in Caffeine Intake Among U.S. Children and Adolescents](#)

*Pediatrics* 2014;133(3):386–393

As sales of energy drinks increase, emergency room visits and deaths have been increasingly associated with overconsumption or improperly mixing energy drinks with alcohol and drugs, especially among 18- to 25-year-olds. This study analyzed caffeine intake among youth from nationally representative data and provides a snapshot of caffeine intake in the wake of increasing energy drink and coffee consumption.

Michael J. Cannon, Jennifer D. Stowell, Rebekah Clark, Philip R. Dollard, Delaney Johnson, Karen Mask, Cynthia Stover, Karen Wu, Minal Amin, Will Hendley, Jing Guo, D. Scott Schmid, and Sheila C. Dollard

### [Repeated Measures Study of Weekly and Daily Cytomegalovirus Shedding Patterns in Saliva and Urine of Healthy Cytomegalovirus-Seropositive Children](#)

*BMC Infectious Diseases* 2014;14(1):569

Congenital cytomegalovirus is a major cause of birth defects and developmental disabilities. Although much is already known about how the virus is transmitted, this study clarified several points about viral shedding, how long the virus is typically shed, which body fluids contain the highest viral loads, and which children and what behaviors are more likely to spread the virus.

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Kristin J. Cummings, M. Abbas Virji, Bruce C. Trapnell, Brenna Carey, Terrance Healey, and Kathleen Kreiss

[Early Changes in Clinical, Functional, and Laboratory Biomarkers in Workers at Risk of Indium Lung Disease](#)

*Annals of the American Thoracic Society* 2014;11(9):1395–1403

Occupational exposure to indium compounds can cause fatal indium lung diseases, but early effects of exposure are not well understood. The mortality of indium lung disease is high in that 3 of the first 10 recognized cases died at young ages after short tenures in the industry. This paper demonstrates early biomarkers of respiratory effects at substantially lower levels of serum indium than were previously known.

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Robert D. Daniels, Travis L. Kubale, James H. Yiin, Matthew M. Dahm, Thomas R. Hales, Dalsu Baris, Shelia H. Zahm, James J. Beaumont, Kathleen M. Waters, and Lynne E. Pinkerton

[Mortality and Cancer Incidence in a Pooled Cohort of U.S. Firefighters from San Francisco, Chicago, and Philadelphia \(1950–2009\)](#)

*Occupational and Environmental Medicine* 2014;71(6):388–397

This longitudinal study of firefighters employed by three major cities from 1950 through 2009 found increased risk of oral, digestive, respiratory, and urinary cancers, including the first report of excess malignant mesothelioma. Given its size and design, the study represents a substantial improvement over previous research and presents evidence of a link between firefighting and cancer.

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Eric J. Esswein, John Snawder, Bradley King, Michael Breitenstein, Marissa Alexander-Scott, and Max Kiefer

[Evaluation of Some Potential Chemical Exposure Risks During Flowback Operations in Unconventional Oil and Gas Extraction: Preliminary Results](#)

*Journal of Occupational and Environmental Hygiene* 2014;11(10):D174–184

Benzene exposure is associated with cancer risks, but hydraulic fracturing often requires workers to be in contact with benzene-rich fluids. This research assesses the risks and exposure criteria for benzene and other chemicals encountered in hydraulic fracturing. The paper also identifies risks and exposure prevention methods and provides an exposure assessment framework for scientists evaluating the health risks of oil and gas extraction.

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Linda S. Geiss, Jing Wang, Yiling J. Cheng, Theodore J. Thompson, Lawrence Barker, Yanfeng Li, Ann L. Albright, and Edward W. Gregg

[Prevalence and Incidence Trends for Diagnosed Diabetes Among Adults Aged 20 to 79 Years, United States, 1980–2012](#)

*JAMA* 2014;312(12):1218–1226

Diabetes is a major health problem that has increased rapidly in recent decades. This paper examines more than 30 years of survey data to document the increase in the United States. It also shows that the diabetes epidemic may be reaching a plateau. However, although diabetes rates are stabilizing, they continue to increase among Hispanics, non-Hispanic blacks, and people with less than a high school education.

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Edward W. Gregg, Yanfeng Li, Jing Wang, Nilka Rios Burrows, Mohammed K. Ali, Deborah Rolka, Desmond E. Williams, and Linda Geiss

[Changes in Diabetes-Related Complications in the United States, 1990–2010](#)

*The New England Journal of Medicine* 2014;370(16):1514–1523

This study showed that for the average person with diabetes, the risk of complications has decreased substantially over the past 15 years. However, for the average adult, with or without diabetes, the risk of diabetes-related complications has been stagnant, or improved only marginally, because of large increases in the percentage of people living with diabetes.

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Edward W. Gregg, Xiaohui Zhuo, Yiling J. Cheng, Ann L. Albright, K. M. Venkat Narayan, and Theodore J. Thompson

[Trends in Lifetime Risk and Years of Life Lost Due to Diabetes in the USA, 1985–2011: A Modelling Study](#)

*The Lancet Diabetes & Endocrinology* 2014;2(11):867–874

This study shows the impact of increasing incidence and declining mortality on the public health burden of diabetes. The finding that lifetime risk has increased from about 30% to 40% raises questions about the lifetime risk of diabetes for the average person, the number of years lost to the disease by the population, and the number of years people can expect to live with diabetes.

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Alison F. Hinckley, Neeta P. Connally, James I. Meek, Barbara J. Johnson, Melissa M. Kemperman, Katherine A. Feldman, Jennifer L. White, and Paul S. Mead

[Lyme Disease Testing by Large Commercial Laboratories in the United States](#)  
*Clinical Infectious Diseases* 2014;59(5):676–681

The authors show that about 90% of Lyme disease tests are negative, indicating excessive testing and resource misallocation. They also estimate that the true number of annual infections is about 10 times higher than reported to CDC through routine surveillance. This new burden estimate may cause policy makers to reassess the cost and impact of Lyme disease on public health and to motivate manufacturers to release a vaccine.

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B. R. Jackson, J. Alomía Zegarra, H. López-Gatell, J. Sejvar, F. Arzate, S. Waterman, A. Sánchez Núñez, B. López, J. Weiss, R. Quintero Cruz, D. Y. López Murrieta, R. Luna-Gierke, K. Heiman, A. R. Vieira, C. Fitzgerald, P. Kwan, M. Zárate-Bermúdez, D. Talkington, V. R. Hill, B. Mahon, and the GBS Outbreak Investigation Team

[Binational Outbreak of Guillain-Barré Syndrome Associated with \*Campylobacter jejuni\* Infection, Mexico and USA, 2011](#)  
*Epidemiology and Infection* 2014;142(5):1089–1099

Guillain-Barré syndrome (GBS), an autoimmune disease, is the most common form of acute flaccid paralysis. Exposure information and an environmental assessment suggested that a large outbreak of *C. jejuni* infection from inadequately disinfected tap water in the Mexican border city of San Luis Río Colorado caused a GBS outbreak. Collaboration between Mexico and the United States was essential in investigating this outbreak, the first in mainland North America since 1976.

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James G. Kahn, Aliya Jiwani, Gabriela B. Gomez, Sarah J. Hawkes, Harrell W. Chesson, Nathalie Broutet, Mary L. Kamb, and Lori M. Newman

[The Cost and Cost-effectiveness of Scaling Up Screening and Treatment of Syphilis in Pregnancy: A Model](#)  
*PloS one* 2014;9(1):e87510

This study used World Health Organization (WHO) data to estimate the cost-effectiveness of antenatal syphilis screening and treatment, applying eight generic country scenarios based on prevalence, coverage of services, and health care costs. The finding that antenatal screening and treatment for syphilis is cost-effective has influenced health care policies in WHO regions including the Americas toward recommending universal antenatal screening and treatment for syphilis.

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Shelley S. Magill, Jonathan R. Edwards, Wendy Bamberg, Zintars G. Beldavs, Ghinwa Dumyati, Marion A. Kainer, Ruth Lynfield, Meghan Maloney, Laura McAllister-Hollod, Joelle Nadle, Susan M. Ray, Deborah L. Thompson, Lucy E. Wilson, and Scott K. Fridkin for the Emerging Infections Program Healthcare-Associated Infections Antimicrobial Use Prevalence Survey Team

[Multistate Point-Prevalence Survey of Health Care-Associated Infections](#)  
*The New England Journal of Medicine* 2014;370(13):1198–1208

Healthcare-associated infections (HAIs) threaten lives and can cost billions. However, determining which infections are common and which facilities harbor them is difficult. This paper reports the results of a survey performed in 183 hospitals across 10 states and provides prevalence estimates of HAIs in acute care hospitals, the distribution of HAI types and causative pathogens, and the total HAIs and patients in the United States.

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William K. Maina, Andrea A. Kim, George W. Rutherford, Malayah Harper, Boniface O. K'Oyugi, Shahnaaz Sharif, George Kichamu, Nicholas M. Muraguri, Willis Akhwale, and Kevin M. De Cock for the KAIS Study Group

[Kenya AIDS Indicator Surveys 2007 and 2012: Implications for Public Health Policies for HIV Prevention and Treatment](#)  
*Journal of Acquired Immune Deficiency Syndromes* 2014;66 Suppl 1:S130–137

Despite the availability of therapies and prevention measures, HIV remains a global health problem. This study highlights findings from two population-based household surveys in Kenya, which has the third largest HIV epidemic in sub-Saharan Africa. The aim of the surveys was to describe epidemic trends for HIV infection and population-level achievements in Kenya's response. The paper highlights how data from these surveys have been used to inform HIV programs and policy in Kenya.

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Leonard J. Paulozzi, Kun Zhang, Christopher M. Jones, and Karin A. Mack

[Risk of Adverse Health Outcomes with Increasing Duration and Regularity of Opioid Therapy](#)  
*Journal of the American Board of Family Medicine* 2014;27(3):329–338

Drug overdose death rates have more than tripled since 1990, and opioid pain relievers have been the primary culprit. Since 1999, 125,000 people have died of opioid overdoses. In this longitudinal study, the authors describe the causes of prescription abuse and drug overdose, including frequency and daily dosage of opioid use, in a commercially insured population. Findings have implications for clinical practice guidelines and public health policy.



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W. Karl Sieber, Cynthia F. Robinson, Jan Birdsey, Guang X. Chen, Edward M. Hitchcock, Jennifer E. Lincoln, Akinori Nakata, and Marie H. Sweeney

**Obesity and Other Risk Factors: The National Survey of U.S. Long-Haul Truck Driver Health and Injury**

*American Journal of Industrial Medicine* 2014;57(6):615–626

This study found that obesity and smoking were twice as prevalent among long-haul truck drivers as in the 2010 U.S. adult working population. Sixty-one percent of drivers reported having two or more risk factors: hypertension, obesity, smoking, high cholesterol, no physical activity, or 6 or fewer hours of sleep per 24-hour period. The authors suggest a need for targeted interventions and increased surveillance to meet truckers' health needs.

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Sharon G. Smith, Katherine A. Fowler, and Phyllis H. Niolon

**Intimate Partner Homicide and Corollary Victims in 16 States: National Violent Death Reporting System, 2003–2009**

*American Journal of Public Health* 2014;104(3):461–466

Intimate partner violence is defined as physical violence, sexual violence, stalking, or psychological aggression (including coercive tactics) by a current or former intimate partner. The authors examine the frequency and characteristics of deaths resulting from intimate partner violence over time. Findings highlight the effects of intimate partner violence on those outside the relationship, especially children.

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Anil G. Suryaprasad, Jianglan Z. White, Fujie Xu, Beth-Ann Eichler, Janet Hamilton, Ami Patel, Shadia Bel Hamdounia, Daniel R. Church, Kerri Barton, Chardé Fisher, Kathryn Macomber, Marisa Stanley, Sheila M. Guilfoyle, Kristin Sweet, Stephen Liu, Kashif Iqbal, Rania Tohme, Umid Sharapov, Benjamin A. Kupronis, John W. Ward, and Scott D. Holmberg

**Emerging Epidemic of Hepatitis C Virus Infections Among Young Nonurban Persons Who Inject Drugs in the United States, 2006–2012**

*Clinical Infectious Diseases* 2014;59(10):1411–1419

Reports of acute hepatitis C in young people in the United States have increased. Hepatitis C affects about 3 million Americans and, even despite gross underreporting on death certificates, causes almost 20,000 deaths annually. This study characterizes an emerging epidemic of hepatitis C virus infection among rural youth in the United States. Increases are particularly common among young users of prescription painkillers and users of injection drugs.

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Naomi K. Tepper, Sheree L. Boulet, Maura K. Whiteman, Michael Monsour, Polly A. Marchbanks, W. Craig Hooper, and Kathryn M. Curtis

**Postpartum Venous Thromboembolism: Incidence and Risk Factors**

*Obstetrics and Gynecology* 2014;123(5):987–996

This study shows how the incidence of venous thromboembolism (VTE) changes by week postpartum in a nationwide sample. The authors also examine how risk factors affect the rate of VTE at different times after childbirth. Findings show that VTE risk is highest in the first 3 weeks after delivery but that complications produce an elevated risk of VTE through 12 weeks postpartum.

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Quanhe Yang, Yuna Zhong, Matthew Ritchey, Fleetwood Loustalot, Yuling Hong, Robert Merritt, and Barbara A. Bowman

**Predicted 10-Year Risk of Developing Cardiovascular Disease at the State Level in the U.S.**

*American Journal of Preventive Medicine* 2015;48(1):58–69

Nearly 800,000 people die each year from cardiovascular disease (CVD), making it the leading cause of death in the United States. Annual costs total \$312.6 billion. This study provides the first estimates of the 10-year risk of developing cardiovascular and related illnesses at the state level. Findings support targeted prevention programs by states to prevent CVD, coronary heart disease, and stroke.

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## Data Methods and Study Design

Joseph Y. Abrams, Eric S. Weintraub, James M. Baggs, Natalie L. McCarthy, Lawrence B. Schonberger, Grace M. Lee, Nicola P. Klein, Edward A. Belongia, Michael L. Jackson, Allison L. Naleway, James D. Nordin, Simon J. Hambidge, and Ermiyas D. Belay

**Childhood Vaccines and Kawasaki Disease, Vaccine Safety Datalink, 1996–2006**

*Vaccine* 2015;33(2):382–387

Left untreated, Kawasaki disease (KD) can cause coronary artery aneurysms or serious cardiac complications. To address public concerns about childhood vaccinations triggering KD, this study analyzed data from 1.7 million children in seven managed care organizations, totaling 4.4 million person-years—resulting in the strongest evidence to date rejecting concerns that vaccines increase risk of KD. In fact, KD rates are lower in the 42 days after vaccination.

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Cynthia Baur and Christine Prue

[The CDC Clear Communication Index is a New Evidence-based Tool to Prepare and Review Health Information](#)

*Health Promotion Practice* 2014;15(5):629–637

Public health practitioners have long struggled to express complex health and safety information in clear and accurate language. The authors build on research literature and use quantitative and qualitative analyses to develop a scoring rubric that can assess and improve the clarity of health materials. CDC evaluation data show positive and sustainable impact from use of this practical tool.

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Ligong Chen, Jarad M. Schiffer, Shannon Dalton, Carol L. Sabourin, Nancy A. Niemuth, Brian D. Plikaytis, and Conrad P. Quinn

[Comprehensive Analysis and Selection of Anthrax Vaccine Adsorbed Immune Correlates of Protection in Rhesus Macaques](#)

*Clinical and Vaccine Immunology* 2014;21(11):1512–1520

This study generated the most comprehensive data set of immunological responses to anthrax vaccine in humans and nonhuman primates. It is also the first study to apply a holistic approach to identifying correlates of protection (COP). These COP predict human survival from an animal study and provide the basis for applying the FDA Animal Rule to modify licensure of a human vaccine.

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Laura Conklin, James J. Sejvar, Stephanie Kieszak, Raquel Sabogal, Carlos Sanchez, Dana Flanders, Felicia Tulloch, Gerardo Victoria, Giselle Rodriguez, Nestor Sosa, Michael A. McGeehin, and Joshua G. Schier

[Long-term Renal and Neurologic Outcomes Among Survivors of Diethylene Glycol Poisoning](#)

*JAMA Internal Medicine* 2014;174(6):912–917

At least 13 medication-associated diethylene glycol (DEG) mass poisonings have occurred since 1937. This longitudinal study of long-term health outcomes characterizes renal and neurologic outcomes among survivors of a 2006 DEG mass-poisoning event in Panama for 2 years after exposure. Findings provide evidence for physicians and survivors to anticipate the improvement in neurologic and renal sequelae after recovery. Findings may also help in long-term planning of medical resources.

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Krista S. Crider, Owen Devine, Ling Hao, Nicole F. Dowling, Song Li, Anne M. Molloy, Zhu Li, Jianghui Zhu, and Robert J. Berry

[Population Red Blood Cell Folate Concentrations for Prevention of Neural Tube Defects: Bayesian Model](#)

*BMJ* (clinical research edition) 2014;349:g4554

About 300,000 neural tube defects occur each year. Up to 85% are preventable if women have sufficient B vitamin and folic acid before and during early pregnancy. This study determined the optimal population-based red blood cell folate concentration to prevent neural tube birth defects. Findings can be used to evaluate prevention programs and to identify women at elevated risk for a neural tube defect during pregnancy due to insufficient folate.

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David K. Espey, Melissa A. Jim, Thomas B. Richards, Crystal Begay, Don Haverkamp, and Diana Roberts

[Methods for Improving the Quality and Completeness of Mortality Data for American Indians and Alaska Natives](#)

*American Journal of Public Health* 2014;104(Suppl 3):S286–294

Historically, mortality data for American Indians and Alaska Natives (AI/AN) have been unreliable because of race misclassification on death certificates. This study accounts for underreporting by linking data from the National Death Index with the Indian Health Service patient registration file. Results show increases in mortality rates for AI/AN over unlinked all-counties data, underscoring the extent of mortality underestimation and revealing regional disparities masked when data are combined.

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Joseph R. Holbrook, Steven P. Cuffe, Bo Cai, Susanna N. Visser, Melinda S. Forthofer, Matteo Bottai, Andrew Ortaglia, and Robert E. McKeown

[Persistence of Parent-Reported ADHD Symptoms From Childhood Through Adolescence in a Community Sample](#)

*Journal of Attention Disorders* 2014. doi:10.1177/1087054714539997

One in nine U.S. children age 4 to 17 years (6.4 million) are diagnosed with attention-deficit/hyperactivity disorder (ADHD). ADHD is associated with poor school performance, substance use, risky sexual behaviors, and unemployment. Understanding patterns, timing, and symptoms has implications for ADHD treatment and management. This study uses a longitudinal community sample to characterize ADHD symptoms among 5- to 19-year-olds.

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Hongwei Hsiao, Jennifer Whitestone, Tsui-Ying Kau, Richard Whisler, J. Gordon Routley, and Michael Wilbur

**Sizing Firefighters: Method and Implications**

*Human Factors* 2014;56(5):873–910

This paper reports new body measurement information of U.S. firefighters for fire apparatus design applications. It also presents a data method to assist in using body data for research-to-practice propositions. These data represent the demographic characteristics of the current firefighter population and, except for a few dimensions, can be used directly to design fire apparatus. Manufacturers are already using these data to develop better equipment.

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Evin Uzun Jacobson, Tom Inglesby, Ali S. Khan, James C. Rajotte, Robert L. Burhans, Catherine C. Slemple, and Jonathan M. Links

**Design of the National Health Security Preparedness Index**

*Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* 2014;12(3):122–131

Health security is highlighted by recent emergencies such as the H1N1 flu pandemic, hurricanes Katrina and Sandy, and the Boston Marathon bombing. This study produced a preparedness index for the nation, including results for 50 states. The index describes how the nation can respond and recover from an emergency and how quickly it can resume normal operations. The index identifies areas of improvement and quantifies preparedness.

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Deliana Kostova, Frank J. Chaloupka, and Ce Shang

**A Duration Analysis of the Role of Cigarette Prices on Smoking Initiation and Cessation in Developing Countries**

*The European Journal of Health Economics* 2014;16(3):279–288

Tobacco use is a preventable cause of premature death and disease worldwide. Most of the world's tobacco-related deaths in the next decade will be in developing countries. Studies have shown that increasing excise taxes can reduce smoking. This study evaluated the effect of cigarette prices on smoking initiation and cessation among adults in two pooled samples of six low- to lower-middle income countries and eight upper-middle income countries.

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Taylor Lewis, Elizabeth Goldberg, Nathaniel Schenker, Vladislav Beresovsky, Susan Schappert, Sandra Decker, Nancy Sonnenfeld, and Iris Shimizu

**The Relative Impacts of Design Effects and Multiple Imputation on Variance Estimates: A Case Study with the 2008 National Ambulatory Medical Care Survey**

*Journal of Official Statistics* 2014;30(1):147–161

Multiple imputation is a popular method for handling missing data and for assessing the variability of estimates due to missing data. This study demonstrates that the variability from missing data, as assessed via multiple imputation, can be almost negligible in a survey with a complex design, when the design effects, and in particular, the effects of clustering in the survey are large.

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Ondrej Mach, Harish Verma, Devendra W. Khandait, Roland W. Sutter, Patrick M. O'Connor, Mark A. Pallansch, Stephen L. Cochi, Robert W. Linkins, Susan Y. Chu, Chris Wolff, and Hamid S. Jafari

**Prevalence of Asymptomatic Poliovirus Infection in Older Children and Adults in Northern India: Analysis of Contact and Enhanced Community Surveillance, 2009**

*The Journal of Infectious Diseases* 2014;1(210):S252–258

In 2009, enhanced poliovirus surveillance was established in polio-endemic areas of Uttar Pradesh and Bihar, India. Polio vaccination campaigns generally target children younger than 5 years of age. Yet a high proportion of people older than 5 years asymptomatically shed polioviruses. This paper provides the first evidence of community transmission of polioviruses by older adults, prompting a new vaccination strategy. Expanding the target age group for vaccination in polio-endemic areas could accelerate polio eradication.

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Gabriel Rainisch, Manjunath Shanar, Michael Wellman, Toby L. Merlin, and Martin I. Meltzer

**Regional Spread of Ebola Virus, West Africa, 2014**

*Emerging Infectious Diseases* 2015;21(3):444–447

This paper explains the spread of the 2014 Ebola epidemic in West Africa. Previously, there was no method for determining areas at greatest risk of importing Ebola cases. The authors demonstrate how the risk for infection can be predicted by case counts, population data, and distances between affected and unaffected areas. Results can be easily replicated and understood by a range of responders with no modeling expertise.

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Lauren M. Rossen, Diba Khan, and Margaret Warner

**Hot Spots in Mortality from Drug Poisoning in the United States, 2007–2009**

*Health & Place* 2014;26:14–20

Deaths from drug poisoning vary widely by state, but geographic variation at the substate level has largely not been explored. This paper describes the authors' effort to identify clusters of high- and low-drug poisoning death rates in the United States and groups of counties with high or low age-adjusted death rates due to drug poisoning. Findings may help target interventions and awareness campaigns by indicating where drug poisonings are concentrated geographically.

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R. Douglas Scott II, Ronda Sinkowitz-Cochran, Matthew E. Wise, James Baggs, Scott Goates, Steven L. Solomon, L. Clifford McDonald, and John A. Jernigan

**CDC Central-line Bloodstream Infection Prevention Efforts Produced Net Benefits of at Least \$640 Million During 1990–2008**

*Health Affairs (Project Hope)* 2014;33(6):1040–1047

This paper provides a financial incentive to invest more in preventing healthcare-associated infections. The authors describe a cost–benefit analysis that combines multiple data sources to estimate the benefit of preventing central-line bloodstream infections. The study provides a framework for public health programs to follow to estimate return on investments in prevention. Findings suggest that investments in CDC programs targeting healthcare-associated infections can lower Medicare and Medicaid reimbursements.

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J. M. Soucie, C. H. Miller, F. M. Kelly, A. B. Payne, M. Creary, P. L. Bockenstedt, C. L. Kempton, M. J. Manco-Johnson, A. T. Neff, and the Haemophilia Inhibitor Research Study Investigators

**A Study of Prospective Surveillance for Inhibitors Among Persons with Haemophilia in the United States**

*Haemophilia: The Official Journal of the World Federation of Hemophilia* 2014;20(2):230–237

About 15% to 20% of people with hemophilia will develop an antibody, or inhibitor, to treatment products. Treatment for inhibitors can exceed a million dollars a year per patient. Genotyping revealed 431 mutations causing hemophilia, 151 of which had not previously been reported. Findings show that surveillance can provide valid data to evaluate inhibitor incidence and prevalence, monitor trends in occurrence rates, and identify potential inhibitor outbreaks associated with products.

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J. Erin Staples, Manjunath B. Shankar, James J. Sejvar, Martin I. Meltzer, and Marc Fischer

**Initial and Long-term Costs of Patients Hospitalized with West Nile Virus Disease**

*The American Journal of Tropical Medicine and Hygiene* 2014;90(3):402–409

The paper describes the long-term U.S. economic burden for specific West Nile virus (WNV) clinical syndromes such as fever, meningitis, encephalitis, and acute flaccid paralysis. Findings may be extrapolated to determine the potential impact of WNV disease in other regions. Estimates also may be used to assess cost-effectiveness of interventions and control measures or to fund vaccines and antiviral agents.

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Li Yan Wang, Mary Vernon-Smile, Mary Ann Gapinski, Marie Desisto, Erin Maughan, and Anne Sheetz

**Cost-benefit Study of School Nursing Services**

*JAMA Pediatrics* 2014;168(7):642–648

This study compared the cost to society of Massachusetts Essential School Health Services (ESHS) program to having no school nurses. Nurses in 933 ESHS schools generated a net benefit of about \$98.2 million to society (2009–2010 school year). For every dollar invested in ESHS, society gained \$2.20. Of the 10,000 simulation trials, 89% had a net benefit. The authors conclude school nurses are a cost-beneficial investment of public money.

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Xingyou Zhang, James B. Holt, Hua Lu, Anne G. Wheaton, Earl S. Ford, Kurt J. Greenlund, and Janet B. Croft

**Multilevel Regression and Poststratification for Small-Area Estimation of Population Health Outcomes: A Case Study of Chronic Obstructive Pulmonary Disease Prevalence Using the Behavioral Risk Factor Surveillance System**

*American Journal of Epidemiology* 2014;179(8):1025–1033

State and national survey data are not always adequate to make public health decisions at local levels. This paper describes a statistic model for obtaining surveillance data that can be aggregated to census geographic units (e.g., counties, congressional districts) and generate reliable small-area estimates of population health outcomes. This approach uses state and national health survey data, is scalable, and may be adapted for other geocoded national health surveys.

## Laboratory Science

Brian S. Crow, Brooke G. Pantazides, Jennifer Quiñones-González, Joshua W. Garton, Melissa D. Carter, Jonas W. Perez, Caroline M. Watson, Dennis J. Tomcik, Michael D. Crenshaw, Bobby N. Brewer, James R. Riches, Sarah J. Stubbs, Robert W. Read, Ronald A. Evans, Jerry D. Thomas, Thomas A. Blake, and Rudolph C. Johnson

**Simultaneous Measurement of Tabun, Sarin, Soman, Cyclosarin, VR, VX, and VM Adducts to Tyrosine in Blood Products by Isotope Dilution UHPLC-MS/MS**  
*Analytical Chemistry* 2014;86(20):10397–10405

This study provides a simple diagnostic tool that measures exposure to certain nerve agents while eliminating the need for separate analysis and extending the time after an event to confirm exposure. The techniques reduce sample volume and testing costs while improving rate of production. The method is readily transferrable, which would enable labs to quickly ramp up to assist a national response efforts.

Erin E. Epon, Larissa M. Pisney, Joyanna M. Wendt, Duncan R. MacCannell, Sarah J. Janelle, Brandon Kitchel, J. Kamile Rasheed, Brandi M. Limbago, Carolyn V. Gould, Alexander J. Kallen, Michelle A. Barron, and Wendy M. Bamberg

**Carbapenem-resistant *Klebsiella Pneumoniae* Producing New Delhi metallo- $\beta$ -lactamase at an Acute Care Hospital, Colorado, 2012**  
*Infection Control and Hospital Epidemiology* 2014;35(4):390–397

This paper describes the use of whole genome sequencing (WGS) to assist an epidemiologic investigation of antimicrobial-resistant pathogens among patients at a Colorado acute care hospital. This investigation used traditional methods to identify links among patients and lab and bioinformatics to distinguish among case isolates. WGS was used to narrow transmission routes and localize transmission events.

Tara R. Henning, Katherine Butler, Debra Hanson, Gail Sturdevant, Shanon Ellis, Elizabeth M. Sweeney, James Mitchell, Frank Deyoungs, Christi Phillips, Carol Farshy, Yetunde Fakile, John Papp, W. Evan Secor, Harlan Caldwell, Dorothy Patton, Janet M. McNicholl, and Ellen Kersh  
**Increased Susceptibility to Vaginal Simian/Human Immunodeficiency Virus Transmission in Pig-tailed Macaques Coinfected with *Chlamydia Trachomatis* and *Trichomonas Vaginalis***

*The Journal of Infectious Diseases* 2014;210(8):1239–1247

Sexually transmitted infections (STIs) are associated with increased risk of HIV infection, but their biological effect on HIV susceptibility is not fully understood. This paper describes female macaques inoculated with triple coinfection (SHIV, *Chlamydia trachomatis*, and *Trichomonas vaginalis*) and multiple laboratory methods in a complex study design. Findings show *C. trachomatis* and *T. vaginalis* infection increase susceptibility to SHIV.

Xiaoyan Lu, Brett Whitaker, Senthil Kumar K. Sakthivel, Shifaq Kamili, Laura E. Rose, Luis Lowe, Emad Mohareb, Emad M. Ellassal, Tarek Al-sanouri, Aktham Haddadin, and Dean D. Erdman

**Real-time Reverse Transcription-PCR Assay Panel for Middle East Respiratory Syndrome Coronavirus**

*Journal of Clinical Microbiology* 2014;52(1):67–75

This paper describes the development of two real-time reverse transcription-PCR (rRT-PCR) assays for detecting Middle East respiratory syndrome coronavirus (MERS-CoV) with clinical specimens. These and a previous published assay were then evaluated as a panel. A kit consisting of the three assay signatures and a positive control was assembled and distributed to public health laboratories in the United States and internationally to support MERS-CoV surveillance and public health responses.

Diana L. Martin, Brook Goodhew, Nancy Czaicki, Kawanda Foster, Srijana Rajbhandary, Shawn Hunter, and Scott A. Brubaker

***Trypanosoma cruzi* Survival Following Cold Storage: Possible Implications for Tissue Banking**

*PloS one* 2014;9(4):e95398

This paper examines the risk for transmitting parasite *Trypanosoma cruzi* via donated tissue. Many tissues (nonsolid organ) are stored for months at  $< -40^{\circ}\text{C}$ , and such storage was thought to destroy the parasite. However, the data showed otherwise. This study tackles two neglected topics: parasitic disease infection in the United States and transplantation of nonsolid organ tissue. Findings will inform decision making about the need for testing donated tissue for *T. cruzi* infection.



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Ajay P. Nayak, Justin M. Hettick, Paul D. Siegel, Stacey E. Anderson, Carrie M. Long, Brett J. Green, and Donald H. Beezhold

**Toluene Diisocyanate (TDI) Disposition and Co-localization of Immune Cells in Hair Follicles**

*Toxicological Sciences* 2014;140(2):327–337

About 280,000 workers are exposed to chemical allergens used to make polyurethane products. Toluene diisocyanate (TDI), the second most commonly used diisocyanate in industry, can produce an immune response leading to asthma and allergic disease. Most workers are likely exposed by inhaling TDI, but how the immune system is triggered is unclear. This study shows that skin, hair, and sebaceous glands hold TDI antibodies and may produce immune system response.

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James P. O'Callaghan, Kimberly A. Kelly, Reyna L. VanGilder, Michael V. Sofroniew, and Diane B. Miller

**Early Activation of STAT3 Regulates Reactive Astrogliosis Induced by Diverse Forms of Neurotoxicity**

*PLoS one* 2014;9(7):e102003

This paper differentiates neuroinflammatory and neurodegenerative responses from chemical exposures. Inflammation of the brain can manifest as pain, asthma, fatigue, or cognitive problems. Neuroinflammatory syndrome, a subtle form of neurotoxicity, contributes to absenteeism and decreased productivity. This paper provides evidence of a novel and sensitive biomarker to detect the adverse effect of chemical exposures and then characterize and treat this subtle form of neurotoxicity rather than relying on symptoms alone.

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Gitika Panicker, Ira Rajbhandari, Brian M. Gurbaxani, Troy D. Querec, and Elizabeth R. Unger

**Development and Evaluation of Multiplexed Immunoassay for Detection of Antibodies to HPV Vaccine Types**

*Journal of Immunological Methods* 2015;417:107–114

Genital human papillomavirus (HPV) vaccines hold promise for preventing cervical cancer. Reliable antibody-based assays are needed to determine how effectively vaccines work and to evaluate altered dosing schemes. To monitor dosing schemes requires laboratory support with accurate and reliable assays. The authors' assay is reproducible, sensitive, amenable to frequent testing, and can be extended to detect antibodies to other HPV types in newly approved vaccines.

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Linda M. Sargent, Dale W. Porter, Lauren M. Staska, Ann F. Hubbs, David T. Lowry, Lori Battelli, Katelyn J. Siegrist, Michael L. Kashon, Robert R. Mercer, Alison K. Bauer, Bean T. Chen, Jeffrey L. Salisbury, David Frazer, Walter McKinney, Michael Andrew, Shuji Tsuruoka, Morinobu Endo, Kara L. Fluharty, Vince Castranova, and Steven H. Reynolds

**Promotion of Lung Adenocarcinoma Following Inhalation Exposure to Multi-walled Carbon Nanotubes**

*Particle and Fibre Toxicology* 2014;11:3

Engineered carbon nanotubes are found in numerous consumer and industrial products such as paints, industrial lubricants, cosmetics, and toiletries. Multiwalled carbon nanotubes (MWCNT) are used widely in these products, and their low density and small size makes respiratory exposure in occupational settings likely. This study demonstrates that inhaling MWCNT promotes growth of cancerous tumors in mice, a finding that could also be significant in humans.

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Velusamy Srinivasan, Benjamin J. Metcalf, Kristen M. Knipe, Mahamoudou Ouattara, Lesley McGee, Patricia L. Shewmaker, Anita Glennen, Megin Nichols, Carol Harris, Mary Brimmage, Belinda Ostrowsky, Connie J. Park, Stephanie J. Schrag, Michael A. Frace, Scott A. Sammons, and Bernard Beall

**vanG Element Insertions Within a Conserved Chromosomal Site Conferring Vancomycin Resistance to *Streptococcus agalactiae* and *Streptococcus anginosus***

*mBio* 2014;5(4):e01386–14

Antibiotic resistance accounts for at least 2 million infections and 23,000 deaths each year. This study examines emerging resistance to antibiotic vancomycin in human pathogen group B *Streptococcus* (GBS) and in streptococcal species *S. anginosus*. Findings raise concerns that vancomycin treatment of skin and soft infections and bacteremia caused by resistant-GBS could lead to treatment failures and deaths.

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Hua Yang, Jessie C. Chang, Zhu Guo, Paul J. Carney, David A. Shore, Ruben O. Donis, Nancy J. Cox, Julie M. Villanueva, Alexander I. Klimov, and James Stevens

**Structural Stability of Influenza A(H1N1)pdm09 Virus Hemagglutinins**

*Journal of Virology* 2014;88(9):4828–4838

This paper explains how the hemagglutinin (HA) instability observed in early 2009 H1N1 pandemic viruses likely played a role in vaccine production delays. HAs from 2010 and 2011 strains proved more stable. This increased stability is attributed to a mutation in the stalk of the influenza HA that emerged naturally in the circulating viruses. It also furthers our understanding of how HA can affect the influenza virus's stability and affect vaccine effectiveness.

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Katy Yao, Elizabeth T. Luman, and SLMTA Collaborating Authors  
[Evidence from 617 Laboratories in 47 Countries for SLMTA-driven Improvement in Quality Management Systems](#)  
*African Journal of Laboratory Medicine* 2014;3(2):1–11

This study examines the first 4 years of the Strengthening Laboratory Management Toward Accreditation (SLMTA) program, an effort to improve laboratory quality in countries with limited resources. The study uses a lab audit tool to measure progress before and after implementation of SLMTA in every laboratory, allowing aggregation and comparison of results across different lab types. The study concludes that SLMTA is transformative, with potential to improve laboratory testing and patient care.

## Prevention and Control

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S. Bamrah, R. Brostrom, D. Fred, L. Setik, R. Song, L. M. Kawamura, A. Heetderks, and S. Mase  
[Treatment for LTBI in Contacts of MDR-TB Patients, Federated States of Micronesia, 2009–2012](#)  
*The International Journal of Tuberculosis and Lung Disease* 2014;18(8):912–918

*Mycobacterium tuberculosis*, which causes multidrug-resistant (MDR) TB, is resistant to at least two antibiotics, isoniazid and rifampin. After simultaneous MDR-TB outbreaks in the Federated States of Micronesia, which has few resources and 100 times the U.S. incidence rate of TB, infected close contacts were offered a 12-month fluoroquinolone-based preventive treatment regimen. Results show the treatment regimens were safe and well tolerated, and no TB cases occurred among persons treated.

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Ren G. Dong, Daniel E. Welcome, Donald R. Peterson, Xueyan S. Xu, Thomas W. McDowell, Christopher Warren, Takafumi Asaki, Simon Kudernatsch, and Antony Brammer  
[Tool-specific Performance of Vibration-reducing Gloves for Attenuating Palm-transmitted Vibrations in Three Orthogonal Directions](#)  
*International Journal of Industrial Ergonomics* 2014;44(6):827–839

Hand-arm vibration syndrome is a musculoskeletal disorder in the workplace. It is linked to the use of vibrating hand tools. Vibration-reducing gloves reduce exposure to vibration, but their effectiveness is unclear. This study estimated the effectiveness of vibration-reducing gloves for almost every type of powered hand tool. Findings suggest that when workers select gloves appropriate for their tools, they can reduce vibration-induced injuries on the job.

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Naomi Drexler, Mark Miller, Justin Gerding, Suzanne Todd, Laura Adams, F. Scott Dahlgren, Nelva Bryant, Erica Weis, Kristen Herrick, Jessica Francies, Kenneth Komatsu, Stephen Piontkowski, Jose Velascosoltero, Timothy Shelhamer, Brian Hamilton, Carmen Eribes, Anita Brock, Patsy Sneezy, Cye Goseyun, Harty Bendle, Regina Hovet, Velda Williams, Robert Massung, and Jennifer H. McQuiston

[Community-based Control of the Brown Dog Tick in a Region with High Rates of Rocky Mountain Spotted Fever, 2012–2013](#)  
*PloS One* 2014;9(12):e112368

Rocky Mountain spotted fever (RMSF) is a potentially fatal tickborne disease found among Arizona tribes at 300 times the rate of the U.S. population. The case-fatality rate is 7 times greater than the U.S. average, and most deaths occur among children. This paper shows the effectiveness of an integrated pest management program, RMSF Rodeo, which demonstrated that the use of new acaricide products can control ticks in tribal communities.

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Donatus U. Ekwueme, Vladislav J. Uzunangelov, Thomas J. Hoerger, Jacqueline W. Miller, Mona Saraiya, Vicki B. Benard, Ingrid J. Hall, Janet Royalty, Chunyu Li, and Evan R. Myers

[Impact of the National Breast and Cervical Cancer Early Detection Program on Cervical Cancer Mortality Among Uninsured Low-income Women in the U.S., 1991–2007](#)

*American Journal of Preventive Medicine* 2014;47(3):300–308

Screening for cervical cancer saves lives, but the benefits are unequally distributed by income. This study estimated the benefits of screening to prevent and control cervical cancer among uninsured low-income U.S. women. The model was applied to participants 18 to 64 years old in the National Breast and Cervical Cancer Early Detection Program. Findings show that investing in cancer screening reduces deaths among medically underserved low-income women and extends and improves their quality of life.

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Alicia M. Fry, Doli Goswami, Kamrun Nahar, Amina Tahia Sharmin, Mustafizur Rahman, Larisa Gubareva, Tasnim Azim, Joseph Bresee, Stephen P. Luby, and W. Abdullah Brooks

**Efficacy of Oseltamivir Treatment Started Within 5 days of Symptom Onset to Reduce Influenza Illness Duration and Virus Shedding in an Urban Setting in Bangladesh: A Randomised Placebo-controlled Trial**

*The Lancet Infectious Diseases* 2014;14(2):109–118

Influenza is usually controlled by vaccination and antiviral drugs. A commonly used antiviral approved for all ages is oseltamivir. This paper describes a double-blind, randomized controlled trial that measures how well oseltamivir reduces illness and viral shedding among people with influenza in whom treatment was started within 5 days of symptom onset. Oseltamivir was shown to reduce the duration of symptoms and virus shedding in people with uncomplicated influenza infections.

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Lytt I. Gardner, Thomas P. Giordano, Gary Marks, Tracey E. Wilson, Jason A. Craw, Mari-Lynn Drainoni, Jeanne C. Keruly, Allan E. Rodriguez, Faye Malitz, Richard D. Moore, Lucy A. Bradley-Springer, Susan Holman, Charles E. Rose, Sonali Girde, Meg Sullivan, Lisa R. Metsch, Michael Saag, and Michael J. Mugavero for the Retention in Care Study Group

**Enhanced Personal Contact with HIV Patients Improves Retention in Primary Care: A Randomized Trial in 6 U.S. HIV Clinics**

*Clinical Infectious Diseases* 2014;59(5):725–734

Patients with human immunodeficiency virus (HIV) need uninterrupted medical care to experience the most benefit from antiretroviral therapy. But, many patients miss appointments and have lengthy gaps in care. This study examined whether enhanced personal contact with patients would improve retention in care. The study also looked at whether brief skills training would improve retention beyond enhanced contact. Findings show enhanced contact with patients improves retention in HIV primary care compared with standard practices.

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Ian M. Goldstein, Deliana Kostova, Jennifer L. Foltz, and Genevieve M. Kenney

**The Impact of Recent CHIP Eligibility Expansions on Children's Insurance Coverage, 2008–12**

*Health Affairs (Project Hope)* 2014;33(10):1861–1867

When the Children's Health Insurance Program (CHIP) was reauthorized in 2009, 15 states raised eligibility thresholds. This paper shows how the expansion of CHIP eligibility affected children's health insurance coverage. CHIP is up for reauthorization in 2015, and further funding will be needed to maintain the program. Study findings will promote a better understanding of state-level differences that could inform efforts to enroll children who remain uninsured but are eligible for CHIP.

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Hamid Jafari, Jagadish M. Deshpande, Roland W. Sutter, Sunil Bahl, Harish Verma, Mohammad Ahmad, Abhishek Kunwar, Rakesh Vishwakarma, Ashutosh Agarwal, Shilpi Jain, Concepcion Estivariz, Raman Sethi, Natalie A. Molodecky, Nicholas C. Grassly, Mark A. Pallansch, Arani Chatterjee, and R. Bruce Aylward

**Polio Eradication. Efficacy of Inactivated Poliovirus Vaccine in India**

*Science* 2014;345(6199):922–925

Inactivated poliovirus vaccine (IPV) is effective against paralytic disease, but its effect on mucosal immunity is debated. This study assesses the effectiveness of IPV in boosting mucosal immunity. The study provides strong evidence that IPV boosts intestinal immunity among children with a history of multiple oral poliovirus vaccine (OPV) doses more effectively than an additional OPV dose.

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Robert D. Kirkcaldy, Hillard S. Weinstock, Page C. Moore, Susan S. Philip, Harold C. Wiesenfeld, John R. Papp, Peter R. Kerndt, Shacondra Johnson, Khalil G. Ghanem, and Edward W. Hook III

**The Efficacy and Safety of Gentamicin Plus Azithromycin and Gemifloxacin Plus Azithromycin as Treatment of Uncomplicated Gonorrhea**

*Clinical Infectious Diseases* 2014;59(8):1083–1091

Gonorrhea treatment is complicated by the relative ease with which *Neisseria gonorrhoeae* develops antimicrobial resistance. New treatment options are urgently needed. This randomized, open-label trial examined the effectiveness and tolerability of two combinations of noncephalosporin antimicrobials for treating patients with urogenital gonorrhea. Findings show gentamicin/azithromycin and gemifloxacin/azithromycin are highly effective for treating urogenital gonorrhea.

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Arielle Lasry, Stephanie L. Sansom, Richard J. Wolitski, Timothy A. Green, Craig B. Borkowf, Pragna Patel, and Jonathan Mermin

**HIV Sexual Transmission Risk Among Serodiscordant Couples: Assessing the Effects of Combining Prevention Strategies**

*AIDS* 2014;28(10):1521–1529

Some 1.2 million people in the United States live with HIV, and about 48,000 transmissions occur annually. Treatment regimens are lifelong. This study unveils the cumulative risk of contracting HIV over 1 and 10 years given various prevention strategies. By putting a meaningful number on HIV risk, the study allows people to figure out appropriate prevention measures. Findings may prompt people to understand their own susceptibility.

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Carlos Navarro-Colorado, Abdirahman Mahamud, Ann Burton, Christopher Haskew, Gidraf K. Maina, John B. Wagacha, Jamal A. Ahmed, Sharmila Shetty, Susan Cookson, James L. Goodson, Marian Schilperoord, and Paul Spiegel

**Measles Outbreak Response Among Adolescent and Adult Somali Refugees Displaced by Famine in Kenya and Ethiopia, 2011**

*The Journal of Infectious Diseases* 2014;210(12):1863–1870

A 2011 outbreak of measles in three Ethiopian refugee complexes, after a large influx of refugees from Somalia, was driven by an unusual number of adolescents and adults, requiring the response be adapted for the different age groups. Personal data (age, sex, vaccination status, arrival date, attack rates, and case fatality ratios), vaccination data, and coverage surveys were reviewed. Findings show that when populations are displaced by measles outbreaks, health authorities should consider routinely vaccinating adults.

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Ciara E. O'Reilly, Ethel V. Taylor, Tracy Ayers, Ribka Fantu, Sisay Alemayehu Abayneh, Barbara Marston, Yordanos B. Molla, Tegene Sewnet, Fitsum Abebe, Robert M. Hoekstra, and Robert Quick

**Improved Health Among People Living with HIV/AIDS Who Received Packages of Proven Preventive Health Interventions, Amhara, Ethiopia**

*PloS One* 2014;9(9):e107662

Opportunistic infections are significant causes of illness and death among people living with HIV/AIDS. This study measures the impact of giving basic care packages to HIV-infected persons in Ethiopia who were clients of antiretroviral therapy clinics. Through the U.S. President's Emergency Plan for AIDS Relief, CDC distributes intervention packages (e.g., soap, condoms, albendazole, co-trimoxazole prophylaxis, and household water treatment products). Findings suggest these packages, accompanied by product demos by hospital staff, reduce the risk of opportunistic infections.

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The RTS,S Clinical Trials Partnership

**Efficacy and Safety of the RTS,S/AS01 Malaria Vaccine During 18 Months After Vaccination: A Phase 3 Randomized, Controlled Trial in Children and Young Infants at 11 African Sites**

*PLoS Medicine* 2014;11(7):e1001685

This paper describes the safety and efficacy of malaria vaccine RTS,S/AS01 during 18 months after vaccination at 11 African sites. Findings show RTS,S/AS01 prevented many cases of clinical and severe malaria after vaccine dose 3, with the highest impact in areas with the greatest incidence of malaria. The vaccine was more effective in children than in infants, but even among infants, the number of malaria cases prevented was substantial.

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Franco Scinicariello and Melanie C. Buser

**Urinary Polycyclic Aromatic Hydrocarbons and Childhood Obesity: NHANES (2001–2006)**

*Environmental Health Perspectives* 2014;122(3):299–303

Prenatal exposure to polycyclic aromatic hydrocarbons (PAHs) has been associated with obesity in early childhood. PAHs are also carcinogens. This paper uses data from the National Health and Nutrition Examination Survey to examine the association of PAH metabolites with body mass index, waist size, and obesity rate among youth. The study concluded that PAH and naphthalene metabolites correlate with higher body mass index, waist size, and obesity in children and adolescents.

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Xin Xu, Robert L. Alexander, Jr., Sean A. Simpson, Scott Goates, James M. Nonnemaker, Kevin C. Davis, and Tim McAfee

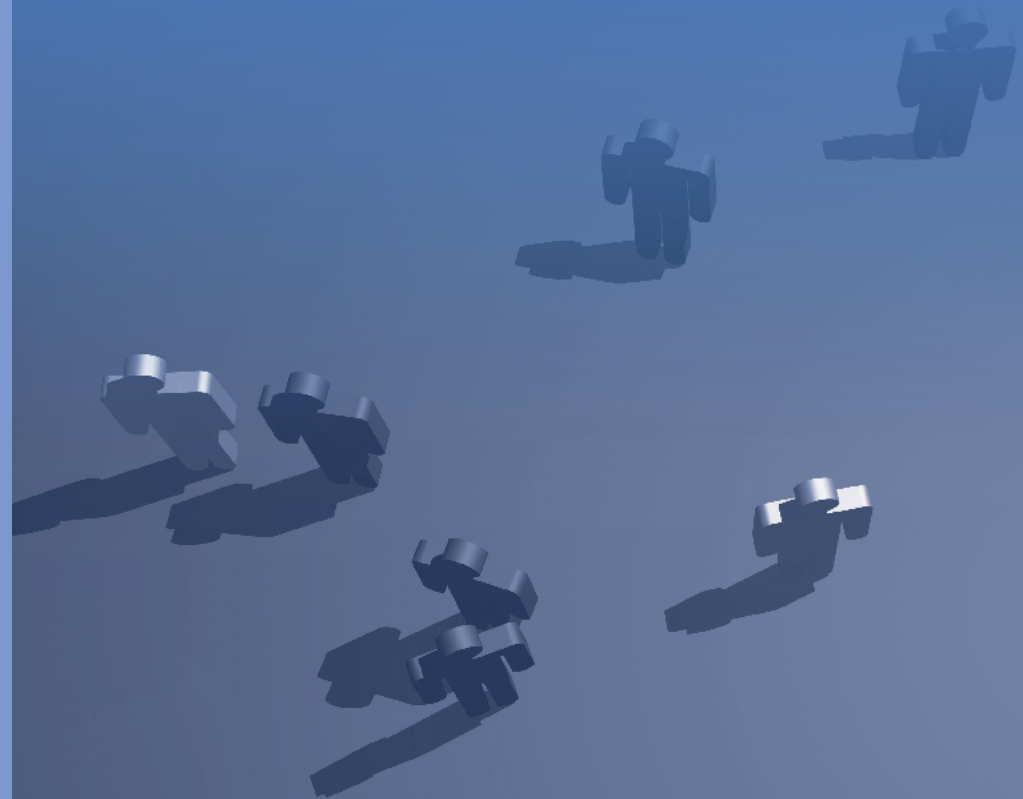
**A Cost-effectiveness Analysis of the First Federally Funded Antismoking Campaign**

*American Journal of Preventive Medicine* 2015;48(3):318–325.

In 2012, CDC launched a national antismoking campaign: Tips From Former Smokers. Analysis found that Tips saved about 179,099 quality-adjusted life years and prevented 17,109 premature deaths in the United States. With a campaign cost of roughly \$48 million, Tips spent about \$480 per quitter, \$2,819 per premature death averted, \$393 per life years saved, and \$268 per quality-adjusted life years gained. The campaign also resulted in a 12% increase in quit attempts.

# Lifetime Scientific **ACHIEVEMENT**

The following current or former CDC/ATSDR employees were nominated for the Lifetime Scientific Achievement Award, which recognizes individuals for a body of work contributing to public health. Nominees were judged on their work's scientific merit, its effect on public health and the mission of CDC/ATSDR, and on their leadership and recognition by peers.





## Captain Robert John Berry (Ret), MD, MPH

National Center on Birth Defects and Developmental Disabilities

CAPT Robert Berry's career exemplifies the role of the public health physician, his work extending from basic science to public health promotion. He has devoted his career to preventing birth defects and is the world's leading authority on the safety of folic acid fortification to prevent neural tube defects. His efforts have led to folic acid fortification in food staples in more than 70 countries and prevented tens of thousands of devastating birth defects.

In the 1980s, CAPT Berry started a 30-year collaboration with China to promote birth defects surveillance programs in many low- and middle-income countries. The studies conducted as part of this collaboration have produced dozens of influential manuscripts. The collaboration has improved public health capacity beyond birth defects prevention, including networks and systems still used in treatment for cancer, maternal and infant health, autism, environmental health, and infectious disease.

Data from the China studies and community intervention program are still used in new research to inform public health policy and improve the health of infants and children worldwide. Furthermore, the mothers and children in the China cohort are still being tracked and contacted for new studies.

CAPT Berry's contribution with the China study illustrates his career focus on large and fundamental research projects. He provided extraordinary diplomacy and leadership in pulling together a team of Chinese and American investigators and an understanding of epidemiologic science at the highest levels. His work earned him the Friendship Award, the highest award given by China to foreigners.

CAPT Berry's work on folic acid laid the foundation for the 2010 launch of Birth Defects COUNT, a global initiative to significantly reduce infant death and lifelong disability. His subject matter expertise has consistently guided the development of surveillance systems and neural tube defect prevention programs in Southeast Asia, Africa, and Latin America.

CAPT Berry has received many awards and recognitions including the Distinguished Service Medal and the Secretary of Health and Human Services Award for Distinguished Service. He is frequently invited to present at international meetings, and he has mentored countless fellows, students, junior scientists, and Epidemic Intelligence Service officers.

## Rear Admiral Kenneth G. Castro, MD

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

Dr. Kenneth G. Castro began his 32-year career at CDC as an Epidemic Intelligence Service officer on the team responding to the AIDS epidemic. Since 1983, he has earned a reputation as a leader and subject-matter expert in HIV and tuberculosis (TB). His work spans the practice of epidemiology, laboratory science, clinical trials, public health program practice, and clinical medicine. Since completing his infectious diseases fellowship in 1989, he has continued to care for patients through his work at the Infectious Diseases Program of Grady Health Systems in Atlanta, Georgia, and he still teaches at Emory University School of Medicine. He also has published more than 150 peer-reviewed publications, *MMWR* reports, policy statements, and practice guidelines.

Dr. Castro established a case-control study to define risk factors in people from Haiti diagnosed with HIV/AIDS and put together a community-based study in Belle Glade, Florida—a town ravaged by HIV/AIDS. The results of these studies helped dispel fears of acquiring HIV via casual contact or insect vectors. His other contributions to the analyses of AIDS surveillance data helped demonstrate the disparate occurrence of HIV/AIDS in racial and ethnic minorities and draw attention to needs in these populations.

These collaborative analyses of AIDS surveillance data justified the planning and implementation of the first Department of Health and Human Services Conference on AIDS in Racial and Ethnic Minorities. Later in 1988, this information was included in Surgeon General C. Everett Koop's report *Understanding AIDS*, mailed to more than 100 million households in the United States. Because of Dr. Castro's combined subject matter expertise, Hispanic heritage, and fluency in Spanish, he was charged with CDC clearance of the Spanish version of this report. He ensured the information was accurate and worked with other Spanish-speaking professionals to make sure the messages would be understood by the main Hispanic subgroups in the United States.

As the director of the Division of Tuberculosis Elimination, Dr. Castro embodies the principles of servant leadership. He has successfully established a unity of purpose among more than 230 professionals under his charge and has implemented thriving collaborations with partners to work toward the elimination of TB in the United States.

## Earl S. Ford, MD, MPH

National Center for Chronic Disease Prevention and Health Promotion

Dr. Earl S. Ford has been at the forefront of investigating chronic diseases for 27 years. His research covers 7 of the 10 leading causes of death and crosses the lifespan, from health and risk factors in childhood to prevention and treatment in adulthood, to mortality. He has been a leader in areas such as C-reactive protein and measures of inflammation, vitamins B and D and folate, sleep health, asthma, and the contributions of lifestyle versus medical advances in the declines in heart disease and stroke mortality.

A particular area in which Dr. Ford has been a national public health leader is on metabolic syndrome, the clustering of factors that indicate higher risk for diabetes and other chronic disease. His research has been critical to the debate about metabolic syndrome, including who is at risk and how many people have this clustering of risk factors.

Dr. Ford has published more than 370 peer-reviewed manuscripts. Seventy of these articles have been cited more than 100 times, and 10 more than 500 times. His collective publications have been cited an average of 1,300 times per year, totaling more than 32,000 citations. Citation of Dr. Ford's scientific publications remains a staple of chronic disease surveillance and burden reports in the literature.

But Dr. Ford's scientific contributions go beyond publication and debate. His research on healthy behaviors and chronic disease risk factors helped lead the American Heart Association to adopt cardiovascular health as one of its 2020 national goals. This new goal was a significant shift for that international organization to focus more strongly on prevention and health promotion along with the control and treatment of cardiovascular conditions.

Dr. Ford's prominence in the chronic disease field has led to adjunct professor appointments at Morehouse College, Emory University, and Georgia Southern. He has received a number of Commissioned Corps awards and is recognized and sought for global collaborations. He is a requested peer reviewer for more than 80 scientific journals and has been a member of 11 national and international task forces and committees on diabetes, metabolic syndrome, and cardiovascular diseases.

## Patricia M. Griffin, MD

National Center for Emerging and Zoonotic Infectious Diseases

Dr. Patricia M. Griffin is a globally recognized expert in foodborne and enteric infections who has made foundational contributions to the science of food safety—developing new ways of collecting and analyzing data and authoring or coauthoring publications that have shaped the field for three decades. She has defined the health burden of foodborne illness in the United States; established surveillance systems that improve infection tracking; and overseen landmark investigations resulting in new regulation, revamped industry practices, and intensive microbiologic testing.

Dr. Griffin has improved surveillance and developed innovative ways to integrate epidemiologic and laboratory data to detect and respond to problems quickly. Despite heavy supervisory and management responsibilities, she has been for two decades the leading expert in the complex arena of Shiga toxin-producing *E. coli* (STEC). She early on integrated laboratory and clinical information, assembling and publishing proof that some strains are deadly whereas others cause little harm. Her efforts were central to the U.S. focus on controlling the most dangerous strains. As a result, the U.S. Department of Agriculture declared six serogroups of STEC, in addition to *E. coli* O157, to be adulterants in beef.

In 1993, Dr. Griffin became chief of bacterial foodborne disease epidemiology at CDC, and in 2005, chief of the Enteric Diseases Epidemiology Branch. The investigative work she has overseen for 20 years has led to product recalls, improvements in processing, new regulations, and improved food industry and consumer practices, all of which prevent illnesses and deaths.

She is a fellow of the Infectious Disease Society of America and the American Epidemiological Society. Her many awards include CDC's Shepard Award for the best scientific paper (first author), the Langmuir Award for best epidemiology paper (co-author), and the Mackel award for the best epidemiological-microbiological science talk (co-author). She has received the U.S. Public Health Service Outstanding Service Medal and the Distinguished Service Medal. In the past three years, she has received three NCEZID Honor Awards and the NCEZID Lifetime Achievement Dowlle Award. She also is the editor of the food safety section for *Clinical Infectious Diseases*. She also teaches public health courses at Emory University.

## Leonard Paulozzi, MD, MPH

*National Center for Injury Prevention and Control*

Dr. Leonard Paulozzi is a scientific leader whose landmark achievements have advanced the health of Americans—particularly through his development of the National Violent Death Reporting System, or NVDRS, and his discoveries that unveiled the epidemic and causes of prescription drug overdoses. His work on prescription drug overdose and violence fall within the top 10 leading causes of death and the top 3 leading causes of death for younger age groups.

In 2003, Dr. Paulozzi developed NVDRS, one of the Injury Center's most valued public health tools. Before the system, scientists had limited data to help them focus violence prevention programs. Today, NVDRS not only monitors violent deaths, it provides details on circumstances leading to deaths. NVDRS is the first system to link reports from law enforcement officers, medical examiners and coroners, and toxicologists to capture different perspectives on the causes of deaths, leading to better decisions about violence prevention.

In 2007, Dr. Paulozzi sounded the alarm on the rise of prescription drug overdose fatalities. For years, drug overdose was considered a substance abuse problem focused on high-risk addicts. Many believed the epidemic resulted mostly from “doctor shopping” or drug diversion. Dr. Paulozzi shifted attention to the role of opioid prescribing by physicians. His research improved how prescription opioid drugs are formulated, distributed, and prescribed so patients are less prone to addiction. His work also advanced the use of prescription drug monitoring programs. His research even influenced the White House Office of National Drug Control Policy Prescription Drug Abuse Prevention Plan.

Dr. Paulozzi spearheaded a partnership with the Bureau of Justice Assistance, the Food and Drug Administration, and Brandeis University in developing the Prescription Behavior Surveillance System (PBSS). PBSS gathers data from state prescription drug monitoring programs and monitors metrics on inappropriate prescription drug practices and consumer use of prescription drugs, particularly opioid analgesics.

Dr. Paulozzi has authored and coauthored more than 100 publications and given countless talks and media interviews. His work has been cited over 4,000 times, and his papers have won the Langmuir Prize and been nominated for the Charles C. Shepard Award seven times.

## Steven M. Schrader, PhD

*National Institute for Occupational Safety and Health*

Dr. Steven M. Schrader has conducted research on the human male reproductive system and been at the forefront of reproductive toxicology research for the past 32 years. He came to CDC in 1983 to work in the reproductive toxicology program, and he used his training in reproductive physiology to develop a state-of-the-art male reproductive health profile for occupational field studies. This pioneering work established the NIOSH male reproductive health assessment program and enabled the NIOSH reproductive health assessment team to conduct field investigations in the United States, Canada, China, and Russia.

Recognizing that the role of sexual function was not being adequately assessed in his original NIOSH male reproductive health profile, Dr. Schrader evaluated a variety of clinical methods and worked with research teams to update the profile. The new profile included the assessment of sexual function in men in occupational population studies.

Dr. Schrader conducted the first and most comprehensive longitudinal study of human semen characteristics, measuring several parameters monthly for nine months in a cohort of men. The quality of the research was recognized with two Alice Hamilton Awards for Occupational Safety and Health.

Dr. Schrader's work on the evaluation of sexual function in bicycle police officers inspired more research in this area and showed that workplace exposures can affect a man's ability to have healthy children. This message has been widely accepted, and numerous improved bicycle saddle designs are now in use.

Further, Dr. Schrader developed the methods and procedures for assessing the effects of workplace exposures on the reproductive health of men. This not only established the scientific direction for CDC to study the effects of occupational exposures on fecundity and fertility, it also laid the framework for assessing male reproductive studies across North America, Europe, and Asia.

In addition to the numerous invitations to present his research around the world, Dr. Schrader has served as a reviewer for the Office of Technology Assessment, the National Toxicology Program, the Indo-U.S. Subcommission on Science and Technology, United Nations Commission on Sustainable Development, Department of Veterans Affairs, and Health Canada. He has served on the editorial board of various peer-reviewed journals.

# Previous WINNERS

of the Charles C. Shepard Science Awards

## 2014

### Assessment

Nadira K. Sultana, Samir K. Saha, Hassan M. Al-Emran, Joyanta K. Modak, M. A. Yushuf Sharker, Shams El-Arifeen, Adam L. Cohen, Abdullah H. Baqui, and Stephen P. Luby

[Impact of Introduction of the \*Haemophilus influenzae\* Type b Conjugate Vaccine into Childhood Immunization on Meningitis in Bangladeshi Infants](#)

*Journal of Pediatrics* 2013;163:573-8

### Data Methods and Study Design

Matthew W. Wheeler and A. John Bailer

[An Empirical Comparison of Low-dose Extrapolation from Points of Departure \(PoD\) compared to Extrapolations Based upon Methods That Account for Model Uncertainty](#)

*Regulatory Toxicology and Pharmacology* 2013;67:75-82

### Laboratory and Methods

James M. Smith, Rachna Rastogi, Ryan S. Teller, Priya Srinivasan, Pedro M. M. Mesquita, Umadevi Nagaraja, Janet M. McNicholl, R. Michael Hendry, Chuong T. Dinh, Amy Martin, Betsy C. Herold, and Patrick F. Kiser

[Intravaginal Ring Eluting Tenofovir Disoproxil Fumarate Completely Protects Macaques from Multiple Vaginal Simian-HIV Challenges](#)

*Proceedings of the National Academy of Sciences of the United States of America* 2013; 110(40): 16145-16150

### Prevention and Control

Tim McAfee, Kevin C. Davis, Robert L. Alexander Jr., Terry F. Pechacek and Rebecca Bunnell

[Effect of the First Federally Funded U.S. Antismoking National Media Campaign](#)

*The Lancet* 2013;382(9909):2003-2011

## Lifetime Scientific Achievement

Nancy J. Cox, PhD

Dr. Cox was recognized for her global leadership, expertise, mentorship, and scientific innovation in the epidemiology of influenza viruses and immunization.

## 2013

### Assessment

Rachel M. Smith, Melissa K. Schaefer, Marion A. Kainer, Matthew Wise, Jennie Finks, Joan Duwve, Elizabeth Fontaine, Alvina Chu, Barbara Carothers, Amy Reilly, Jay Fiedler, Andrew D. Wiese, Christine Feaster, Lex Gibson, Stephanie Griesse, Anne Purfield, Angela A. Cleveland, Kaitlin Benedict, Julie R. Harris, Mary E. Brandt, Dianna Blau, John Jernigan, J. Todd Weber, and Benjamin J. Park, for the Multistate Fungal Infection Outbreak Response Team

[Fungal Infections Associated with Contaminated Methylprednisolone Injections — Preliminary Report](#)

*The New England Journal of Medicine* 2012; doi: 10.1056/NEJMoa1213978

### Data Methods and Study Design

Joseph Y. Abrams, John R. Copeland, Robert V. Tauxe, Kashmira A. Date, Ermias D. Belay, Rajal K. Mody, and Eric D. Mintz

[Real-Time Modeling Used for Outbreak Management During a Cholera Epidemic, Haiti, 2010–2011](#)

*Epidemiology and Infection* 2012; doi: 10.1017/S0950268812001793

### Laboratory Science

Yen T. Duong, Maofeng Qiu, Anindya K. De, Keisha Jackson, Trudy Dobbs, Andrea A. Kim, John N. Nkengasong, and Bharat S. Parekh

[Detection of Recent HIV-1 Using a New Infection Limiting-Antigen Avidity Assay: Potential for HIV-1 Incidence Estimates and Avidity Maturation Studies](#)

*PLoS One* 2012;7(3):e33328

### Prevention and Control

Ryan T. Novak, Jean Ludovic Kambou, Fabien V. K. Diomandé, Tiga F. Tarbangdo, Rasmata Ouédraogo-Traoré, Lassana Sangaré, Clement Lingani, Stacey W Martin, Cynthia Hatcher, Leonard W. Mayer, F. Marc LaForce, Fenella Avokey, Mamoudou H. Djingarey, Nancy E. Messonnier, Sylvestre R. Tiendrébéogo, and Thomas A. Clark

[Serogroup A Meningococcal Conjugate Vaccination in Burkina Faso: Analysis of National Surveillance Data](#)

*The Lancet Infectious Diseases* 2012;12(1):757-764

## Lifetime Scientific Achievement

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Larry J. Anderson, MD

Dr. Anderson was recognized for his innovative research on respiratory syncytial virus and its disease burden in the United States.

## 2012

### Assessment

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Concepción F. Estívariz, Hamid Jafari, Roland W. Sutter, T. Jacob John, Vibhor Jain, Ashutosh Agarwal, Harish Verma, Mark A. Pallansch, Ajit P. Singh, Sherine Guirguis, Jitendra Awale, Anthony Burton, Sunil Bahl, Arani Chatterjee, and R. Bruce Aylward

[Immunogenicity of Supplemental Doses of Poliovirus Vaccine for Children Aged 6–9 Months in Moradabad, India: A Community-Based, Randomized Controlled Trial](#)

*The Lancet Infectious Diseases* 2012;12(2):128–135 (published online 2011)

### Data Methods and Study Design

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Alula Hadgu, Nandini Dendukuri, and Liangliang Wang

[Evaluation of Screening Tests for Detecting Chlamydia trachomatis Bias Associated with the Patient-Infected-Status Algorithm Epidemiology](#)

*Epidemiology* 2012;23(1):72–82 (published online 2011)

### Laboratory Science

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Brian H. Bird, Louis H. Maartens, Shelley Campbell, Baltus J. Erasmus, Bobbie R. Erickson, Kimberly A. Dodd, Christina F. Spiropoulou, Deborah Cannon, Clifton P. Drew, Barbara Knust, Anita K. McElroy, Marina L. Khristova, César G. Albariño, and Stuart T. Nichol

[Rift Valley Fever Virus Vaccine Lacking the NSs and NSm Genes Is Safe, Nonteratogenic, and Confers Protection from Viremia, Pyrexia, and Abortion Following Challenge in Adult and Pregnant Sheep](#)

*Journal of Virology* 2011;85(24):12901–12909

### Prevention and Control

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Timothy R. Sterling, M. Elsa Villarino, Andrey S. Borisov, Nong Shang, Fred Gordin, Erin Bliven-Sizemore, Judith Hackman, Carol Dukes Hamilton, Dick Menzies, Amy Kerrigan, Stephen E. Weis, Marc Weiner, Diane Wing, Marcus B. Conde, Lorna Bozeman, C. Robert Horsburgh, and Richard E. Chaisson for the TB Trials Consortium PREVENT TB Study Team

[Three Months of Rifapentine and Isoniazid for Latent Tuberculosis Infection](#)

*New England Journal of Medicine* 2011;365(23):2155–2166

## Lifetime Scientific Achievement

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Henry Falk, MD, MPH

Dr. Falk was recognized for his expertise and global leadership in environmental health science and public health policy and practice.

## 2011

### Assessment and Epidemiology

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Stacy M. Holzbauer, Aaron S. DeVries, James J. Sejvar, Christine H. Lees, Jennifer Adjemian, Jennifer H. McQuiston, Carlota Medus, Catherine A. Lexau, Julie R. Harris, Sergio E. Recuenco, Ermias D. Belay, James F. Howell, Bryan F. Buss, Mady Hornig, John D. Gibbins, Scott E. Brueck, Kirk E. Smith, Richard N. Danila, W. Ian Lipkin, Daniel H. Lachance, P. James B. Dyck, and Ruth Lynfield

[Epidemiologic Investigation of Immune-Mediated Polyradiculoneuropathy Among Abattoir Workers Exposed to Porcine Brain](#)

*PLoS One* 2010;5(3):e9782

### Laboratory and Methods

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Robert D. Gilmore, Jr., Rebekah R. Howison, Gabrielle Dietrich, Toni G. Patton, Dawn R. Clifton, and James A. Carroll

[The bba64 Gene of Borrelia burgdorferi, the Lyme Disease Agent, Is Critical for Mammalian Infection via Tick Bite Transmission](#)

*Proceedings of the National Academy of Sciences of the United States of America* 2010;107(16):7515–7520

### Prevention and Control

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Charles S. Chasela, Michael G. Hudgens, Denise J. Jamieson, Dumbani Kayira, Mina C. Hosseinipour, Athena P. Kourtis, Francis Martinson, Gerald Tegha, Rodney J. Knight, Yusuf I. Ahmed, Deborah D. Kamwendo, Irving F. Hoffman, Sascha R. Ellington, Zebrone Kacheche, Alice Soko, Jeffrey B. Wiener, Susan A. Fiscus, Peter Kazembe, Innocent A. Mofolo, Maggie Chigwenembe, Dorothy S. Sichali, and Charles M. van der Horst for the Breastfeeding, Antiretroviral, and Nutrition Study Group

[Maternal or Infant Antiretroviral Drugs to Reduce HIV-1 Transmission](#)

*New England Journal of Medicine* 2010;362(24):2271–2281



## Lifetime Scientific Achievement

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Kathleen Kreiss, MD

Dr. Kreiss was recognized as a world-renowned expert in occupational respiratory disease. She has improved workplace safety by encouraging the use of safer materials and better work practices and controls.

## 2010

### Assessment and Epidemiology

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Fatimah S. Dawood, Seema Jain, Lyn Finelli, Michael W. Shaw, Stephen Lindstrom, Rebecca J. Garten, Larisa V. Gubareva, Xiyun Xu, Carolyn B. Bridges, and Timothy M. Uyeki

[Emergence of a Novel Swine-Origin Influenza A \(H1N1\) Virus in Humans](#)  
*New England Journal of Medicine* 2009;360:2605–2615

### Laboratory and Methods

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Joseph U. Igiertseme, Qing He, Kahaliah Joseph, Francis O. Eko, Deborah Lyn, Godwin Ananaba, Angela Campbell, Claudiu Banda, and Carolyn M. Black

[Role of T Lymphocytes in the Pathogenesis of Chlamydia Disease](#)  
*The Journal of Infectious Diseases* 2009;200:926–934

### Prevention and Control

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Sandra L. Decker

[Changes in Medicaid Physician Fees and Patterns of Ambulatory Care](#)  
*Inquiry* 2009;46(3):291–304

Manish Patel, Cristina Pedreira, Lucia Helena De Oliveira, Jacqueline Tate, Maribel Orozco, Juan Mercado, Alcides Gonzalez, Omar Alespin, Juan José Amador, Jazmina Umaña, Angel Balmaseda, Maria Celina Perez, Jon Gentsch, Tara Kerin, Jennifer Hull, Slavica Mijatovic, Jon Andrus, and Umesh Parashar

[Association Between Pentavalent Rotavirus Vaccine and Severe Rotavirus Diarrhea Among Children in Nicaragua](#)  
*JAMA* 2009;301(21):2243–2251

## Lifetime Scientific Achievement

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Polly Marchbanks, PhD, MSN

Dr. Marchbanks was recognized for her global leadership and research, particularly in the area of contraception.

## 2009

### Assessment and Epidemiology

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H. Irene Hall, Ruiguang Song, Philip Rhodes, Joseph Prejean, Qian An, Lisa M. Lee, John Karon, Ron Brookmeyer, Edward H. Kaplan, Matthew T. McKenna, and Robert S. Janssen for the HIV Incidence Surveillance Group

[Estimation of HIV Incidence in the United States](#)  
*JAMA* 2008;300:520–529

### Laboratory and Methods

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Tracie L. Williams, Leah Luna, Zhu Guo, Nancy J. Cox, James L. Pirkle, Ruben O. Donis, and John R. Barr

[Quantification of Influenza Virus Hemagglutinins in Complex Mixtures Using Isotope Dilution Tandem Mass Spectrometry](#)  
*Vaccine* 2008;26:2510–2520

### Prevention and Control

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Larissa Roux, Michael Pratt, Tammy O. Tengs, Michelle M. Yore, Teri L. Yanagawa, Jill Van Den Bos, Candace Rutt, Ross C. Brownson, Kenneth E. Powell, Gregory Heath, Harold W. Kohl III, Steven Teutsch, John Cawley, I-Min Lee, Linda West, and David M. Buchner

[Cost Effectiveness of Community-Based Physical Activity Interventions](#)  
*American Journal of Preventive Medicine* 2008;35:578–588

## Lifetime Scientific Achievement

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Stephen B. Thacker, MD, MSc

Dr. Thacker was recognized for his leadership and his work in fostering scientific communication and training of future leaders in public health. He has overseen the Epidemic Intelligence Service (EIS) program since 1989, and under his direction, the first CDC plan for surveillance was completed in 1985.

## 2008

### Assessment and Epidemiology

Earl S. Ford, Umed A. Ajani, Janet B. Croft, Julia A. Critchley, Darwin R. Labarthe, Thomas E. Kottke, Wayne H. Giles, and Simon Capewell

[Explaining the Decrease in U.S. Deaths from Coronary Disease, 1980–2000](#)

*New England Journal of Medicine* 2007;356:2388–2398

### Laboratory and Methods

Terrence M. Tumpey, Christopher F. Basler, Patricia V. Aguilar, Hui Zeng, Alicia Solórzano, David E. Swayne, Nancy J. Cox, Jacqueline M. Katz, Jeffery K. Taubenberger, Peter Palese, and Adolfo García-Sastre

[A Two-Amino Acid Change in the Hemagglutinin of the 1918 Influenza Virus Abolishes Transmission](#)

*Science* 2007;315:655–659

### Prevention and Control

R. Louise Floyd, Mark Sobell, Mary M. Velasquez, Karen Ingersoll, Mary Nettleman, Linda Sobell, Patricia Dolan Mullen, Sherry Ceperich, Kirk von Sternberg, Burt Bolton, Bradley Skarpness, and Jyothi Nagaraja for the Project CHOICES Efficacy Study Group

[Preventing Alcohol-Exposed Pregnancies: A Randomized Controlled Trial](#)

*American Journal of Preventive Medicine* 2007;32:1–10

### Lifetime Scientific Achievement

Vincent Castranova, PhD

Dr. Castranova was recognized for his leadership in laboratory-based occupational health research. His contributions to the understanding of the biology of lung cells have been translated into the practical study of lung diseases and development of prevention programs.

## 2007

### Assessment and Epidemiology

Wolfgang Hladik, Shelia C. Dollard, Jonathan Mermin, Ashley L. Fowlkes, Robert Downing, Minal M. Amin, Flora Banage, Esau Nzaro, Peter Kataaha, Timothy J. Dondero, Philip E. Pellett, and Eve M. Lackritz

[Transmission of Human Herpesvirus 8 by Blood Transfusion](#)

*New England Journal of Medicine* 2006;355:1331–1338

### Laboratory and Methods

Mary A. Hoelscher, Sanjay Garg, Dinesh S. Bangari, Jessica A. Belser, Xiuhua Lu, Iain Stephenson, Rick A. Bright, Jacqueline M. Katz, Suresh K. Mittal, and Suryaprakash Sambhara

[Development of Adenoviral-Vector-Based Pandemic Influenza Vaccine against Antigenically Distinct Human H5N1 Strains in Mice](#)

*The Lancet* 2006;368:1495–1502

### Prevention and Control

Cynthia G. Whitney, Tamar Pilishvili, Monica M. Farley, William Schaffner, Allen S. Craig, Ruth Lynfield, Ann-Christine Nyquist, Kenneth A. Gershman, Marietta Vazquez, Nancy M. Bennett, Arthur Reingold, Ann Thomas, Mary P. Glode, Elizabeth R. Zell, James H. Jorgensen, Bernard Beall, and Anne Schuchat

[Effectiveness of Seven-Valent Pneumococcal Conjugate Vaccine Against Invasive Pneumococcal Disease: A Matched Case-Control Study](#)

*The Lancet* 2006;368:1495–1502

### Lifetime Scientific Achievement

Roger I. Glass, MD, MPH, PhD

Dr. Glass was recognized for his leadership and accomplishments in viral gastroenteritis. His work led to the recognition of rotavirus as a problem in the United States and to development of a rotavirus vaccine to be used worldwide.

## 2006

### Assessment and Epidemiology

Lee Warner, Maurizio Macaluso, Harland D. Austin, David K. Kleinbaum, Lynn Artz, Michael E. Fleenor, Ilene Brill, Daniel R. Newman, and Edward W. Hook III

[Application of the Case-Crossover Design to Reduce Unmeasured Confounding in Studies of Condom Effectiveness](#)

*American Journal of Epidemiology* 2005;161:765–773

Katherine M. Flegal, Barry I. Graubard, David F. Williamson, and Mitchell H. Gail

[Excess Deaths Associated With Underweight, Overweight, and Obesity](#)

*JAMA* 2005;293:1861–1867.

## Laboratory and Methods

Terrence M. Tumpey, Christopher F. Basler, Patricia V. Aguilar, Hui Zeng, Alicia Solórzano, David E. Swayne, Nancy J. Cox, Jacqueline M. Katz, Jeffery K. Taubenberger, Peter Palese, and Adolfo García-Sastre

[Characterization of the Reconstructed 1918 Spanish Influenza Pandemic Virus](#)  
*Science* 2005;310(5745):77–80

## Prevention and Control

Stephen P. Luby, Mubina Agboatwalla, Daniel R. Feikin, John Painter, Ward Billhimer, Arshad Altaf, and Robert M. Hoekstra

[Effect of Handwashing on Child Health: A Randomised Controlled Trial](#)  
*The Lancet* 2005;366:225–233

## Lifetime Scientific Achievement

Robert V. Tauxe, MD, MPH

Dr. Tauxe was recognized for his leadership in the prevention and control of foodborne diseases in the United States and internationally. His work and that of his colleagues has resulted in dramatic changes in foodborne disease surveillance, outbreak detection, practices, and policies.

## 2005

### Assessment and Epidemiology

Barbara Lopes Cardozo, Oleg O. Bilukha, Carol A. Gotway Crawford, Irshad Shaikh, Mitchell I. Wolfe, Michael L. Gerber, and Mark Anderson

[Mental Health, Social Functioning, and Disability in Postwar Afghanistan](#)  
*JAMA* 2004;292:575–584

### Laboratory and Methods

Justin M. Hettick, Michael L. Kashon, Janet P. Simpson, Paul D. Siegel, Gerald H. Mazurek, and David N. Weissman

[Proteomic Profiling of Intact Mycobacteria by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry](#)  
*Analytical Chemistry* 2004;76:5769–5776

## Prevention and Control

Marc Bulterys, Denise J. Jamieson, Mary Jo O'Sullivan, Mardge H. Cohen, Robert Maupin, Steven Nesheim, Mayris P. Webber, Russell Van Dyke, Jeffrey Wiener, and Bernard M. Branson for the Mother-Infant Rapid Intervention at Delivery (MIRIAD) Study Group

[Rapid HIV-1 Testing During Labor: A Multicenter Study](#)  
*JAMA* 2004;292:219–223

## Outstanding Scientific Contribution to Public Health

William H. Hannon, Barbara W. Adams, and Robert F. Vogt

National Center for Environmental Health/Agency for Toxic Substances and Disease Registry

[Newborn Screening Quality Assurance Program](#)

## Lifetime Scientific Achievement

James M. Hughes, MD

Dr. Hughes was recognized for his expertise in infectious diseases and bioterrorism and response. His leadership in addressing emerging and reemerging global threats has brought global prominence to CDC and improved public health infrastructures nationwide.

## 2004

### Assessment and Epidemiology

Jennita Reefhuis, Margaret A. Honein, Cynthia G. Whitney, Shadi Chamany, Eric A. Mann, Krista R. Biernath, Karen Broder, Susan Manning, Swati Avashia, Marcia Victor, Pamela Costa, Owen Devine, Ann Graham, and Coleen Boyle

[Risk of Bacterial Meningitis in Children with Cochlear Implants](#)  
*New England Journal of Medicine* 2003;349:435–445

### Laboratory and Methods

Thomas G. Ksiazek, Dean Erdman, Cynthia S. Goldsmith, Sherif R. Zaki, Teresa Peret, Shannon Emery, Suxiang Tong, Carlo Urbani, James A. Comer, Wilina Lim, Pierre E. Rollin, Scott F. Dowell, Ai-Ee Ling, Charles D. Humphrey, Wun-Ju Shieh, Jeannette Guarner, Christopher D. Paddock, Paul Rota, Barry Fields, Joseph DeRisi, Jyh-Yuan Yang, Nancy Cox, James M. Hughes, James W. LeDuc, William J. Bellini, Larry J. Anderson, and the SARS Working Group

[A Novel Coronavirus Associated with Severe Acute Respiratory Syndrome](#)  
*New England Journal of Medicine* 2003;348:1953–1966

## Prevention and Control

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Cynthia G. Whitney, Monica M. Farley, James Hadler, Lee H. Harrison, Nancy M. Bennett, Ruth Lynfield, Arthur Reingold, Paul R. Cieslak, Tamara Pilishvili, Delois Jackson, Richard R. Facklam, James H. Jorgensen, and Anne Schuchat for the Active Bacterial Core Surveillance of the Emerging Infections Program Network

### [Decline in Invasive Pneumococcal Disease After the Introduction of Protein-Polysaccharide Conjugate Vaccine](#)

*New England Journal of Medicine* 2003;348:1737–1746

## Lifetime Scientific Achievement

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Harold W. Jaffe, MD

Dr. Jaffe was recognized as a national and international leader in the disease investigation of HIV/AIDS, which has increased scientific knowledge about HIV/AIDS and improved national and international approaches to prevention and control.

Walter A. Orenstein, MD

Dr. Orenstein was recognized for his leadership in reducing the occurrence of vaccine-preventable diseases in children. His work has been critical to the development of national vaccine policy and global immunization strategies.

## 2003

### Assessment and Epidemiology

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Polly A. Marchbanks, Jill A. McDonald, Hoyt G. Wilson, Suzanne G. Folger, Michele G. Mandel, Janet R. Daling, Leslie Bernstein, Kathleen E. Malone, Giske Ursin, Brian L. Strom, Sandra A. Norman, Linda K. Weiss, Phyllis Wingo, Michael S. Simon, Ronald T. Burkman, Jesse A. Berlin, and Robert Spirtas

### [Oral Contraceptives and the Risk of Breast Cancer](#)

*New England Journal of Medicine* 2002;346:2025–2032

### Laboratory and Methods

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Bharat S. Parekh, M. Susan Kennedy, Trudy Dobbs, Chou-Pong Pau, Robert Byers, Timothy Green, Dale J. Hu, Suphak Vanichseni, Nancy L. Young, Kachit Choopanya, Timothy D. Mastro, and J. Steven McDougal

### [Quantitative Detection of Increasing HIV Type 1 Antibodies After Seroconversion: A Simple Assay for Detecting Recent HIV Infection and Estimating Incidence](#)

*AIDS Research and Human Retroviruses* 2002;18:295–307

## Prevention and Control

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Robert E. Quick, Akiko C. Kimura, Angelica Thevos, Mathias Tembo, Isidore Shamputa, Lori Hutwagner, and Eric Mintz

### [Diarrhea Prevention Through Household-Level Water Disinfection and Safe Storage in Zambia](#)

*The American Journal of Tropical Medicine and Hygiene* 2002;66:584–589

## Outstanding Scientific Contribution to Public Health

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Barbara Lopes Cardozo, Bradley A. Woodruff, Muireann Brennan, and Paul B. Spiegel

National Center for Environmental Health

### [International Emergency and Refugee Health Branch](#)

## Lifetime Scientific Achievement

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William R. Jarvis, MD

Dr. Jarvis was recognized as a leader in the study of nosocomial infections and other threats to the safety of patients and healthcare workers. His research has led to interventions to reduce these risks and to the development of prevention guidelines.

## 2002

### Assessment and Epidemiology

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Trudy V. Murphy, Paul M. Gargiulo, Mehran S. Massoudi, David B. Nelson, Aisha O. Jumaan, Catherine A. Okoro, Lynn R. Zanzardi, Sabeena Setia, Elizabeth Fair, Charles W. LeBaron, Melinda Wharton, John R. Livengood, and Benjamin Schwartz for the Rotavirus Intussusception Inspection Team

### [Intussusception Among Infants Given an Oral Rotavirus Vaccine](#)

*New England Journal of Medicine* 2001;344:564–572

### Laboratory and Methods

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Brent S. Davis, Gwong-Jen J. Chang, Bruce Cropp, John T. Roehrig, Denise A. Martin, Carl J. Mitchell, Richard Bowen, and Michel L. Bunning

### [West Nile Virus Recombinant DNA Vaccine Protects Mouse and Horse from Virus Challenge and Expresses in vitro a Noninfectious Recombinant Antigen That Can Be Used in Enzyme-Linked Immunosorbent Assays](#)

*Journal of Virology* 2001;75:4040–4047

## Prevention and Control

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Belinda E. Ostrowsky, William E. Trick, Annette H. Sohn, Stephen B. Quirk, Stacey Holt, Loretta A. Carson, Bertha C. Hill, Matthew J. Arduino, Matthew J. Kuehnert, and William R. Jarvis

### Control of Vancomycin-Resistant *Enterococcus* in Health Care Facilities in a Region

*New England Journal of Medicine* 2001;344:1427–1433

## Outstanding Scientific Contribution to Public Health

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Ronald M. Davis, Gary A. Giovino, Michael D. Erikson, and the Office on Smoking and Health

National Center for Chronic Disease Prevention and Health Promotion

### Surgeon General's Reports on Smoking and Health

## Lifetime Scientific Achievement

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Gerald R. Cooper, MD, PhD

Dr. Cooper was recognized for his leadership in improving laboratory measures of lipids that led to the establishment of the CDC Lipid Standardization Program.

## 2001

### Assessment and Epidemiology

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Paul B. Spiegel and Peter Salama

#### War and Mortality in Kosovo, 1998–99: An Epidemiological Testimony

*The Lancet* 2000;335:2204–2209

### Laboratory and Methods

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K.B. Chua, William J. Bellini, Paul A. Rota, Brian H. Harcourt, Azaibi Tamin, S.K. Lam, Thomas G. Ksiazek, Pierre E. Rollin, Sherif R. Zaki, Wun-Ju Shieh, Cynthia S. Goldsmith, Duane J. Gubler, John T. Roehrig, B. Eaton, A.R. Gould, Jim Olson, H. Field, P. Daniels, A.E. Ling, Clarence J. Peters, Larry J. Anderson, and Brian W.J. Mahy

#### Nipah Virus: A Recently Emergent Deadly Paramyxovirus

*Science* 2000;288:1432–1435

## Prevention and Control

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Carolyn Buxton Bridges, William W. Thompson, Martin I. Meltzer, Gordon R. Reeve, Walter J. Talamonti, Nancy J. Cox, Heather A. Lilac, Henrietta Hall, Alexander Klimov, and Keiji Fukuda

### Effectiveness and Cost-Benefit of Influenza Vaccination of Healthy Working Adults: A Randomized Controlled Trial

*JAMA* 2000;284:1655–1662

## Outstanding Scientific Contribution to Public Health

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National Center for Chronic Disease Prevention and Health Promotion

### Behavioral Risk Factor Surveillance System

## Lifetime Scientific Achievement

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Joseph Edward McDade, PhD

Dr. McDade was the first to identify the bacterium *Legionella pneumophila* as the cause of the well-known outbreak of Legionnaires' disease. In the 1980s, he identified the cause of a previously unknown tickborne disease, ehrlichiosis.

## 2000

### Assessment and Epidemiology

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Nathan Shaffer, Rutt Chuachoowong, Philip A. Mock, Chaiporn Bhadrakom, Wimol Siriwasin, Nancy L. Young, Tawee Chotpitayasunondh, Sanay Chearskul, Anuvant Roongpisuthipong, Pratham Chinayon, John Karon, Timothy D. Mastro, and R.J. Simonds

#### Short-Course Zidovudine for Perinatal HIV-1 Transmission in Bangkok, Thailand: A Randomised Controlled Trial

*The Lancet* 1999;353:773–780

## 1999

Robert S. Janssen, Glen A. Satten, Susan L. Stramer, Bhupat D. Rawal, Thomas R. O'Brien, Barbara J. Weiblen, Frederick M. Hecht, Noreen Jack, Farley R. Cleghorn, James O. Kahn, Margaret A. Chesney, and Michael P. Busch

#### New Testing Strategy to Detect Early HIV-1 Infection for Use in Incidence Estimates and for Clinical and Prevention Purposes

*JAMA* 1998;280:42–48



## 1998

Denise M. Cardo, David H. Culver, Carol A. Ciesielski, Pamela U. Srivastava, Ruthanne Marcus, Dominique Abiteboul, Julia Heptonstall, Giuseppe Ippolito, Florence Lot, Penny S. McKibben, and David M. Bell for the Centers for Disease Control and Prevention Needlestick Surveillance Group

### [A Case-Control Study of HIV Seroconversion in Health Care Workers after Percutaneous Exposure](#)

*New England Journal of Medicine* 1997;337:1485–1490

## 1997

Jennifer S. Rota, Janet L. Heath, Paul A. Rota, Gail E. King, María L. Celma, Juan Carabaña, Rafael Fernandez-Muñoz, David Brown, Li Jin, and William J. Bellini

### [Molecular Epidemiology of Measles Virus: Identification of Pathways of Transmission and Implications for Measles Elimination](#)

*The Journal of Infectious Diseases* 1996;173:32–37

Diana E. Schendel, Cynthia J. Berg, Marshelyn Yeargin-Allsopp, Coleen A. Boyle, and Pierre Decoufle

### [Prenatal Magnesium Sulfate Exposure and the Risk for Cerebral Palsy or Mental Retardation Among Very Low-Birth-Weight Children Aged 3 to 5 Years](#)

*JAMA* 1996;276:1805–1810

## 1996

Peter M. Strebel, Nicolae Ion-Nedelcu, Andrew L. Baughman, Roland W. Sutter, and Stephen L. Cochi

### [Intramuscular Injections Within 30 Days of Immunization with Oral Poliovirus Vaccine — A Risk Factor for Vaccine-Associated Paralytic Poliomyelitis](#)

*New England Journal of Medicine* 1995;332:500–506

## 1995

Robert D. Brewer, Peter D. Morris, Thomas B. Cole, Stephanie Watkins, Michael J. Patetta, and Carol Popkin

### [The Risk of Dying in Alcohol-Related Automobile Crashes Among Habitual Drunk Drivers](#)

*New England Journal of Medicine* 1994;331:513–517

## 1994

Michael E. St. Louis, Munkolenkole Kamenga, Christopher Brown, Ann Marie Nelson, Tarande Manzila, Veronique Batter, Frieda Behets, Uwa Kabagabo, Robert W. Ryder, Margaret Oxtoby, Thomas C. Quinn, and William L. Heyward

### [Risk for Perinatal HIV-1 Transmission According to Maternal Immunologic, Virologic, and Placental Factors](#)

*JAMA* 1993;269:2853–2859

## 1993

Brian R. Edlin, Jerome I. Tokars, Michael H. Grieco, Jack T. Crawford, Julie Williams, Emelia M. Sordillo, Kenneth R. Ong, James O. Kilburn, Samuel W. Dooley, Kenneth G. Castro, William R. Jarvis, and Scott D. Holmberg

### [An Outbreak of Multidrug-Resistant Tuberculosis Among Hospitalized Patients with the Acquired Immunodeficiency Syndrome](#)

*New England Journal of Medicine* 1992;326:1514–1521

## 1992

Marta Gwinn, Marguerite Pappaioanou, J. Richard George, W. Harry Hannon, Shari C. Wasser, Martha A. Redus, Rodney Hoff, George F. Grady, Anne Willoughby, Antonia C. Novello, Lyle R. Petersen, Timothy J. Dondero, and James W. Curran

### [Prevalence of HIV Infection in Childbearing Women in the United States](#)

*JAMA* 1991;265:1704–1708

## 1991

Edward A. Belongia, Craig W. Hedberg, Gerald J. Gleich, Karen E. White, Arthur N. Mayeno, David A. Loegering, Sandra L. Dunnette, Phyllis L. Pirie, Kristine L. MacDonald, and Michael T. Osterholm

### [An Investigation of the Cause of the Eosinophilia-Myalgia Syndrome Associated with Tryptophan Use](#)

*New England Journal of Medicine* 1990;323:357–365

## 1990

Patricia M. Griffin, Robert V. Tauxe, Stephen C. Redd, Nancy D. Puhr, Nancy Hargrett-Bean, and Paul A. Blake

**Emergence of Highly Trimethoprim-Sulfamethoxazole-Resistant Shigella in a Native American Population: An Epidemiologic Study**

*American Journal of Epidemiology* 1989;129:1042–1051

## 1989

Chin-Yih Ou, Shirley Kwok, Sheila W. Mitchell, David H. Mack, John J. Sninsky, John W. Krebs, Paul Feorino, Donna Warfield, and Gerald Schochetman

**DNA Amplification for Direct Detection of HIV-1 in DNA of Peripheral Blood Mononuclear Cells**

*Science* 1988;239:295–297

## 1988

Rebeca Rico-Hesse, Mark A. Pallansch, Baldev K. Nottay, and Olen M. Kew

**Geographic Distribution of Wild Poliovirus Type 1 Genotypes**

*Virology* 1987;160:311–322

## 1987

J. Steven McDougal, M. Susan Kennedy, Julie M. Sligh, Sheila P. Cort, Alison C. Mawle, and Janet K. A. Nicholson

**Binding of HTLV-III/LAV to T4+ T Cells by a Complex of the 100K Viral Protein and the T4 Molecule**

*Science* 1986;231:382–385

## 1986

Arthur L. Reingold, Claire V. Broome, Allen W. Hightower, Gloria W. Ajello, Gail A. Bolan, Catherine Adamsbaum, Ellen E. Jones, Catherine Phillips, Hilaire Tiendrebeogo, and Adamou Yada

**Age-Specific Differences in Duration of Clinical Protection After Vaccination with Meningococcal Polysaccharide A Vaccine**

*The Lancet* 1985;2:114–118

# Keynote SPEAKERS

*Following is a list of colleagues who have made keynote speeches at the Shepard Science Awards Ceremony since its inception.*

## 2014

John E. Wennberg, MD, MPH  
Founder/Director of Emeritus  
Dartmouth Institute for Health  
Policy and Clinical Practice  
**Unwarranted Variation in Health Care**

## 2013

No keynote speech

## 2012

James S. Marks, MD, MPH  
Robert Wood Johnson Foundation  
Health Group  
**Making Science and Health Matter**

## 2011

Brian Greenwood, MD, CBE,  
FRCP, FRS  
London School of Hygiene  
& Tropical Medicine  
University of London  
**Vaccines for Global Health**

## 2010

John Holdren, PhD  
Princeton University  
**Science and Technology Policy for  
Ensuring the Public's Health**

## 2009

Paul Krugman, PhD  
Princeton University  
Columnist, *The New York Times*  
**Health and the Economic Future**

## 2008

Neal Nathanson, MD  
University of Pennsylvania School  
of Medicine  
**AIDS Vaccine at the Crossroads**

## 2007

Michael Marmot, MBBS, MPH, PhD,  
FRCP, FFPHM, FMedSci  
Institute for Society and Health  
University College, London  
**Health in an Unequal World**

## 2006

Donald M. Berwick, MD, MPP  
Institute for Healthcare Improvement  
**The 100,000 Lives Campaign: Lessons  
from a National Mobilization**

## 2005

Harvey V. Fineberg, MD, PhD  
Institute of Medicine  
The National Academies  
**Science, Policy, and Public Trust**

## 2004

Shiriki Kumanyika, PhD, MPH  
University of Pennsylvania School  
of Medicine  
*Obesity, Health Disparities, and  
Prevention Paradigms: Hard  
Questions and Hard Choices*

## 2003

Jo Ivey Boufford, MD  
Robert F. Wagner Graduate School  
of Public Health  
New York University  
School of Medicine  
*Assuring the Public's Health in the  
21st Century: A Research Agenda*

## 2002

Marc L. Miringoff, PhD  
Fordham Institute  
for Innovation in Social Policy  
Fordham University  
Graduate Center  
*The Social Determinants of Health*

## 2001

Jeffrey D. Sachs, PhD  
Harvard University  
*Reinvigorating the Fight Against  
Disease in the Developing World*

## 2000

Lynn R. Goldman, MD, MPH, MS  
The Johns Hopkins  
University School of Hygiene and  
Public Health  
*Health of the World*

## 1999

Steven N. Blair, PED  
Cooper Institute  
for Aerobics Research  
*Physical Inactivity as a  
Public Health Problem*

## 1998

Frederick P. Rivara, MD, MPH  
Harborview Injury Prevention and  
Research Center  
*Injury Control—The Uses of Science  
for Prevention*

## 1997

David R. Cox, MD, PhD  
Stanford University  
School of Medicine  
*The Human Genome Project  
and Human Disease*

## 1996

Walter E. Massey, PhD  
Morehouse College  
*Science — The (Ever-Expanding)  
Endless Frontier*

## 1995

Nancy S. Wexler, PhD  
Columbia University  
*Uncongenial Genealogies: Prediction  
and Protection in the Public Interest*

## 1994

Thomas J. Coates, PhD  
University of California  
at San Francisco  
*HIV Prevention Programs in Research:  
What Have We Accomplished and  
Where Do We Need to Go?*

## 1993

W. French Anderson, MD  
University of Southern California  
School of Medicine  
*The Scientific, Ethical, and Regulatory  
Issues of Gene Therapy*

## 1992

Barry R. Bloom, PhD  
Howard Hughes  
Medical Institute  
Albert Einstein  
College of Medicine  
*Revisiting Mycobacteria*

## 1991

Lawrence K. Altman, MD  
*The New York Times*  
*Science and the Media*

## 1990

Purnell W. Choppin, MD  
Howard Hughes Medical Institute  
*The Role of a Private Medical  
Research Organization in Biomedical  
Research and Education*

## 1989

Joseph L. Goldstein, MD  
University of Texas Health  
Sciences Center  
*Lipoprotein Receptors: A  
Genetic Defense Against  
Hypercholesterolemia and  
Atherosclerosis*

## 1988

David Baltimore, PhD  
Whitehead Institute Massachusetts  
Institute of Technology  
*Genetics and Modern Disease*

## 1987

Frank Press, PhD  
National Academy of Sciences  
*DNA in Washington*

## 1986

James O. Mason, MD  
Centers for Disease Control  
*CDC, Science, and the Future*

# Committee MEMBERS

of the 2015  
Charles C. Shepard  
Science Awards

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Anjel Vahratian, PhD, MPH  
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Susan K. Laird, MSN, RN

## SharePoint Manager

Sofia Espinoza Aguilar, PhD

## Editing and Design

Peggy Dana  
Luis Luque, MPA, MFA  
Sue Swensen

## NOTES







# Estimated number of adults and children newly infected with HIV

2013 Total: 2.1 million [1.9–2.4 million] Source: UNAIDS

North America and Western/Central Europe: 88,000 [44,000–160,000]

Caribbean: 12,000 [9,400–14,000]

Latin America: 94,000 [71,000–170,000]

Eastern Europe and Central Asia: 110,000 [86,000–130,000]

Asia and the Pacific: 350,000 [250,000–510,000]

Middle East and North Africa: 25,000 [14,000–41,000]

Sub-Saharan Africa: 1.5 million [1.3 million–1.6 million]



U.S. Department of  
Health and Human Services  
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Control and Prevention